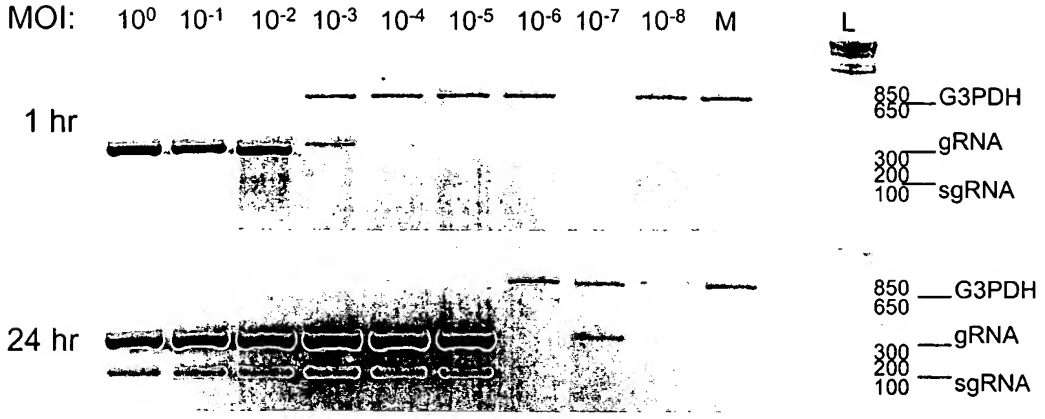
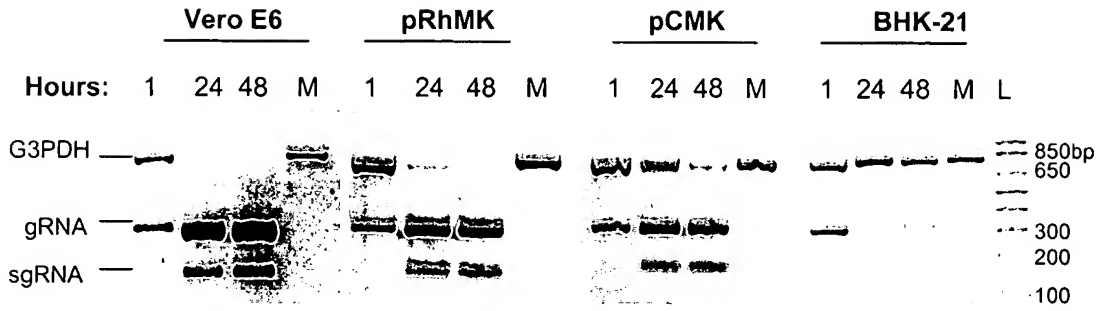

MOI:
10^0 10^-1 10^-2 10^-3 10^-4 10^-5 10^-6 10^-7 10^-8 M
L
1 hr
24 hr
850
650
G3PDH
gRNA
300
200
100
sgRNA

FIG. 1

A.


Vero E6
pRhMK
pCMK
BHK-21
Hours: 1 24 48 M 1 24 48 M 1 24 48 M 1 24 48 M L
G3PDH
gRNA
sgRNA
850bp
650
300
200
100

B.

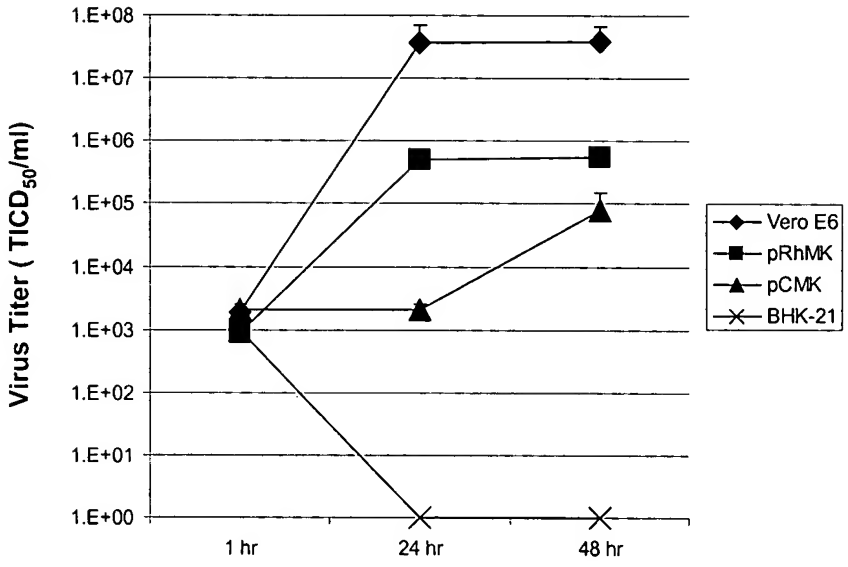

Virus Titer (TICD50/ml)
1.E+08
1.E+07
1.E+06
1.E+05
1.E+04
1.E+03
1.E+02
1.E+01
1.E+00
1 hr
24 hr
48 hr
Vero E6
pRhMK
pCMK
BHK-21

FIG. 2.

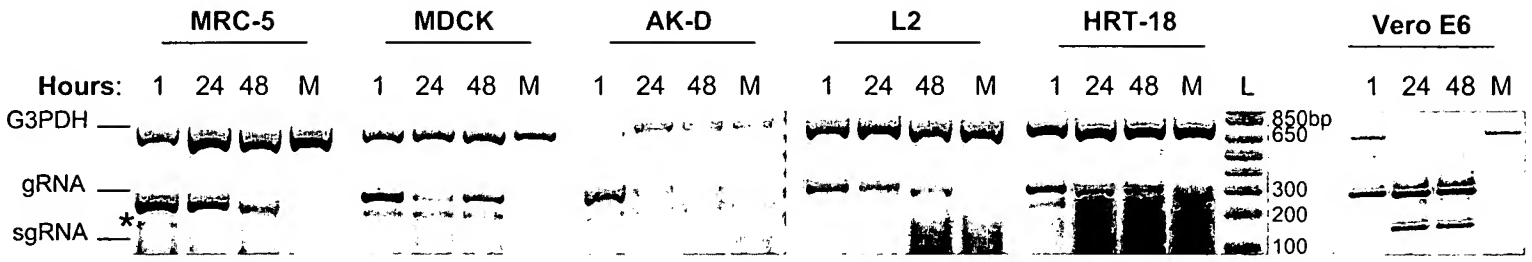
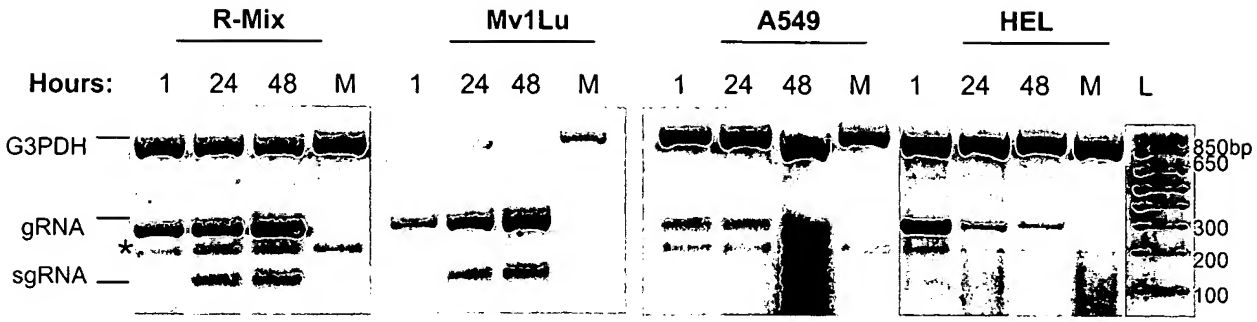

MRC-5
MDCK
AK-D
L2
HRT-18
Vero E6
Hours: 1 24 48 M 1 24 48 M 1 24 48 M 1 24 48 M 1 24 48 M L 1 24 48 M
G3PDH
gRNA
sgRNA
*
850bp
650
300
200
100

FIG. 3.

A.


R-Mix
Mv1Lu
A549
HEL
Hours: 1 24 48 M 1 24 48 M 1 24 48 M 1 24 48 M L
G3PDH
gRNA
sgRNA
*
850bp
650
300
200
100

B.

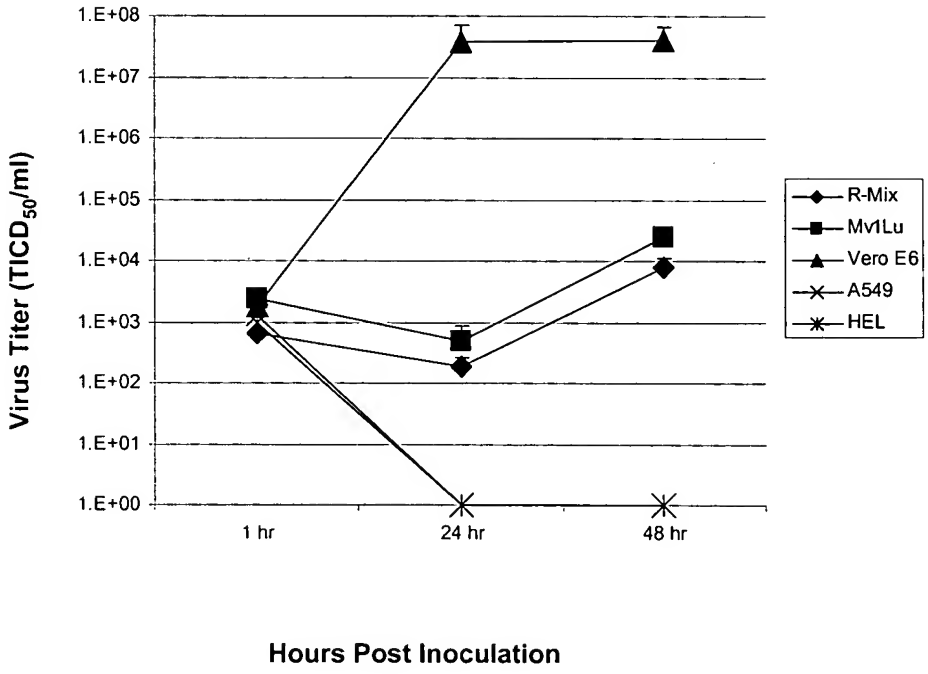
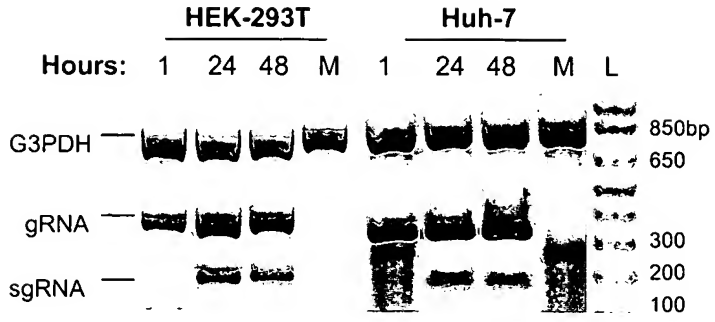

1.E+08
1.E+07
1.E+06
1.E+05
1.E+04
1.E+03
1.E+02
1.E+01
1.E+00
Virus Titer (TICD50/ml)
1 hr
24 hr
48 hr
Hours Post Inoculation
R-Mix
Mv1Lu
Vero E6
A549
HEL

FIG. 4.

A.


HEK-293T
Huh-7
Hours: 1 24 48 M 1 24 48 M L
G3PDH
gRNA
sgRNA
850bp
650
300
200
100

B.

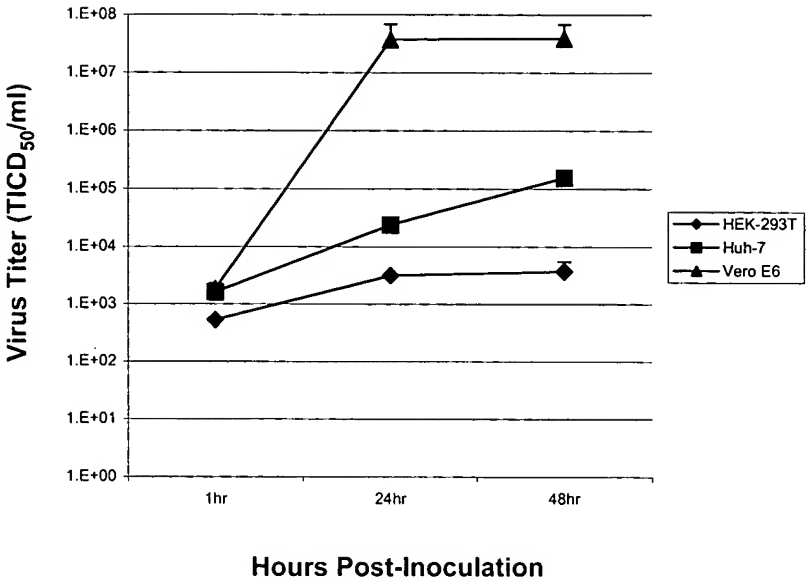
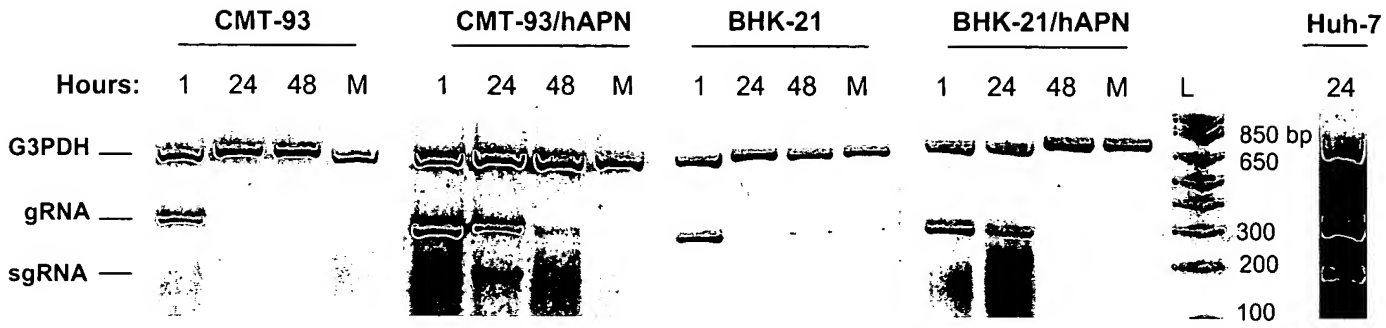

Virus Titer (TICD50/ml)
1.E+08
1.E+07
1.E+06
1.E+05
1.E+04
1.E+03
1.E+02
1.E+01
1.E+00
1hr
24hr
48hr
Hours Post-Inoculation
HEK-293T
Huh-7
Vero E6

FIG. 5.

A.


CMT-93
CMT-93/hAPN
BHK-21
BHK-21/hAPN
Huh-7
Hours: 1 24 48 M 1 24 48 M 1 24 48 M 1 24 48 M L 24
G3PDH
gRNA
sgRNA
850 bp
650
300
200
100

B.

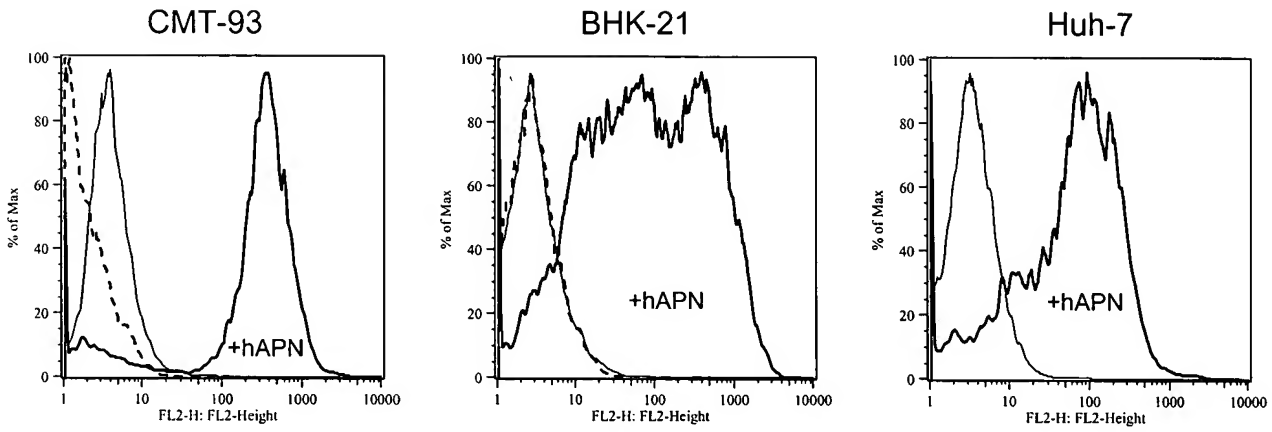

CMT-93
BHK-21
Huh-7
% of Max
+hAPN
FL2-H: FL2-Height

FIG. 6.

FIGURE 7A

```
   1 atattaggtt tttacctacc caggaaaagc caaccaacct cgatctcttg tagatctgtt
  61 ctctaaacga actttaaaat ctgtgtagct gtcgctcggc tgcatgccta gtgcacctac
 121 gcagtataaa caataataaa ttttactgtc gttgacaaga aacgagtaac tcgtccctct
 181 tctgcagact gcttacggtt tcgtccgtgt tgcagtcgat catcagcata cctaggtttc
 241 gtccgggtgt gaccgaaagg taagatggag agccttgttc ttggtgtcaa cgagaaaaca
 301 cacgtccaac tcagtttgcc tgtccttcag gttagagacg tgctagtgcg tggcttcggg
 361 gactctgtgg aagaggccct atcggaggca cgtgaacacc tcaaaaatgg cacttgtggt
 421 ctagtagagc tggaaaaagg cgtactgccc cagcttgaac agccctatgt gttcattaaa
 481 cgttctgatg ccttaagcac caatcacggc cacaaggtcg ttgagctggt tgcagaaatg
 541 gacggcattc agtacggtcg tagcggtata acactgggag tactcgtgcc acatgtgggc
 601 gaaaccccaa ttgcataccg caatgttctt cttcgtaaga acggtaataa gggagccggt
 661 ggtcatagct atggcatcga tctaaagtct tatgacttag gtgacgagct tggcactgat
 721 cccattgaag attatgaaca aaactggaac actaagcatg gcagtggtgc actccgtgaa
 781 ctcactcgtg agctcaatgg aggtgcagtc actcgctatg tcgacaacaa tttctgtggc
 841 ccagatgggt accctcttga ttgcatcaaa gattttctcg cacgcgcggg caagtcaatg
 901 tgcactcttt ccgaacaact tgattacatc gagtcgaaga gaggtgtcta ctgctgccgt
 961 gaccatgagc atgaaattgc ctggttcact gagcgctctg ataagagcta cgagcaccag
1021 acacccttcg aaattaagag tgccaagaaa tttgacactt tcaaagggga atgcccaaag
1081 tttgtgtttc ctcttaactc aaaagtcaaa gtcattcaac cacgtgttga aaagaaaaag
1141 actgagggtt tcatggggcg tatacgctct gtgtaccctg ttgcatctcc acaggagtgt
1201 aacaatatgc acttgtctac cttgatgaaa tgtaatcatt gcgatgaagt ttcatggcag
1261 acgtgcgact ttctgaaagc cacttgtgaa cattgtggca ctgaaaattt agttattgaa
1321 ggacctacta catgtgggta cctacctact aatgctgtag tgaaaatgcc atgtcctgcc
1381 tgtcaagacc cagagattgg acctgagcat agtgttgcag attatcacaa ccactcaaac
1441 attgaaactc gactccgcaa gggaggtagg actagatgtt ttggaggctg tgtgtttgcc
1501 tatgttggct gctataataa gcgtgcctac tgggttcctc gtgctagtgc tgatattggc
1561 tcaggccata ctggcattac tggtgacaat gtggagacct tgaatgagga tctccttgag
1621 atactgagtc gtgaacgtgt taacattaac attgttggcg attttcattt gaatgaagag
1681 gttgccatca ttttggcatc tttctctgct tctacaagtg cctttattga cactataaag
1741 agtcttgatt acaagtcttt caaaaccatt gttgagtcct gcggtaacta taaagttacc
1801 aagggaaagc ccgtaaaagg tgcttggaac attggacaac agagatcagt tttaacacca
1861 ctgtgtggtt ttccctcaca ggctgctggt gttatcagat caatttttgc gcgcacactt
1921 gatgcagcaa accactcaat tcctgatttg caaagagcag ctgtcaccat acttgatggt
1981 atttctgaac agtcattacg tcttgtcgac gccatggttt atacttcaga cctgctcacc
2041 aacagtgtca ttattatggc atatgtaact ggtggtcttg tacaacagac ttctcagtgg
2101 ttgtctaatc ttttgggcac tactgttgaa aaactcaggc ctatctttga atggattgag
2161 gcgaaactta gtgcaggagt tgaatttctc aaggatgctt gggagattct caaatttctc
2221 attacaggtg tttttgacat cgtcaagggt caaatacagg ttgcttcaga taacatcaag
2281 gattgtgtaa aatgcttcat tgatgttgtt aacaaggcac tcgaaatgtg cattgatcaa
2341 gtcactatcg ctggcgcaaa gttgcgatca ctcaacttag gtgaagtctt catcgctcaa
2401 agcaagggac tttaccgtca gtgtatacgt ggcaaggagc agctgcaact actcatgcct
2461 cttaaggcac caaaagaagt aacctttctt gaaggtgatt cacatgacac agtacttacc
2521 tctgaggagg ttgttctcaa gaacggtgaa ctcgaagcac tcgagacgcc cgttgatagc
2581 ttcacaaatg gagctatcgt tggcacacca gtctgtgtaa atggcctcat gctcttagag
2641 attaaggaca aagaacaata ctgcgcattg tctcctggtt tactggctac aaacaatgtc
2701 tttcgcttaa aaggggtgc accaattaaa ggtgtaacct ttggagaaga tactgtttgg
2761 gaagttcaag gttacaagaa tgtgagaatc acatttgagc ttgatgaacg tgttgacaaa
2821 gtgcttaatg aaaagtgctc tgtctacact gttgaatccg gtaccgaagt tactgagttt
2881 gcatgtgttg tagcagaggc tgttgtgaag actttacaac cagtttctga tctccttacc
2941 aacatgggta ttgatcttga tgagtggagt gtagctacat tctacttatt tgatgatgct
3001 ggtgaagaaa acttttcatc acgtatgtat tgttcctttt accctccaga tgaggaagaa
3061 gaggacgatg cagagtgtga ggaagaagaa attgatgaaa cctgtgaaca tgagtacggt
3121 acagaggatg attatcaagg tctccctctg gaatttggtg cctcagctga aacagttcga
3181 gttgaggaag aagaagagga agactggctg gatgatacta ctgagcaatc agagattgag
3241 ccagaaccag aacctacacc tgaagaacca gttaatcagt ttactggtta tttaaaactt
3301 actgacaatg ttgccattaa atgtgttgac atcgttaagg aggcacaaag tgctaatcct
3361 atggtgattg taaatgctgc taacatacac ctgaaacatg gtggtggtgt agcaggtgca
3421 ctcaacaagg caaccaatgg tgccatgcaa aaggagagtg atgattacat taagctaaat
3481 ggccctctta cagtaggagg gtcttgtttg ctttctggac ataatcttgc taagaagtgt
3541 ctgcatgttg ttggacctaa cctaaatgca ggtgaggaca tccagcttct taaggcagca
3601 tatgaaaatt tcaattcaca ggacatctta cttgcaccat tgttgtcagc aggcatattt
```

FIGURE 7B

```
3661 ggtgctaaac cacttcagtc tttacaagtg tgcgtgcaga cggttcgtac acaggtttat
3721 attgcagtca atgacaaagc tctttatgag caggttgtca tggattatct tgataacctg
3781 aagcctagag tggaagcacc taaacaagag gagccaccaa acacagaaga ttccaaaact
3841 gaggagaaat ctgtcgtaca gaagcctgtc gatgtgaagc caaaaattaa ggcctgcatt
3901 gatgaggtta ccacaacact ggaagaaact aagtttctta ccaataagtt actcttgttt
3961 gctgatatca atggtaagct ttaccatgat tctcagaaca tgcttagagg tgaagatatg
4021 tctttccttg agaaggatgc accttacatg gtaggtgatg ttatcactag tggtgatatc
4081 acttgtgttg taataccctc caaaaaggct ggtggcacta ctgagatgct ctcaagagct
4141 ttgaagaaag tgccagttga tgagtatata accacgtacc ctggacaagg atgtgctggt
4201 tatacacttg aggaagctaa gactgctctt aagaaatgca aatctgcatt ttatgtacta
4261 ccttcagaag cacctaatgc taaggaagag attctaggaa ctgtatcctg gaatttgaga
4321 gaaatgcttg ctcatgctga agagacaaga aaattaatgc ctatatgcat ggatgttaga
4381 gccataatgg caaccatcca acgtaagtat aaaggaatta aaattcaaga gggcatcgtt
4441 gactatggtg tccgattctt cttttatact agtaaagagc ctgtagcttc tattattacg
4501 aagctgaact ctctaaatga gccgcttgtc acaatgccaa ttggttatgt gacacatggt
4561 tttaatcttg aagaggctgc gcgctgtatg cgttctctta aagctcctgc cgtagtgtca
4621 gtatcatcac cagatgctgt tactacatat aatggatacc tcacttcgtc atcaaagaca
4681 tctgaggagc actttgtaga aacagtttct ttggctggct cttacagaga ttggtcctat
4741 tcaggacagc gtacagagtt aggtgttgaa tttcttaagc gtggtgacaa aattgtgtac
4801 cacactctgg agagccccgt cgagtttcat cttgacggtg aggttctttc acttgacaaa
4861 ctaaagagtc tcttatccct gcgggaggtt aagactataa aagtgttcac aactgtggac
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5041 aagactttct ttgtactacc tagtgatgac acactacgta gtgaagcttt cgagtactac
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5281 caagaggctt attatagagc ccgtgctggt gatgctgcta acttttgtgc actcatactc
5341 gcttacagta ataaaactgt tggcgagctt ggtgatgtca gagaaactat gacccatctt
5401 ctacagcatg ctaatttgga atctgcaaag cgagttctta atgtggtgtg taaacattgt
5461 ggtcagaaaa ctactacctt aacgggtgta gaagctgtga tgtatatggg tactctatct
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5581 tatctagtac aacaagagtc ttcttttgtt atgatgtctg caccacctgc tgagtataaa
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5701 tacactcata taactgctaa ggagaccctc tatcgtattg acggagctca ccttacaaag
5761 atgtcagagt acaaaggacc agtgactgat gttttctaca aggaaacatc ttacactaca
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6181 caggctacaa ccaagacaac gttcaaacca aacacttggt gtttacgttg tctttggagt
6241 acaaagccag tagatacttc aaattcattt gaagttctgg cagtagaaga cacacaagga
6301 atggacaatc ttgcttgtga aagtcaacaa cccacctctg aagaagtagt ggaaaatcct
6361 accatacaga aggaagtcat agagtgtgac gtgaaaacta ccgaagttgt aggcaatgtc
6421 atacttaaac catcagatga aggtgttaaa gtaacacaag agttaggtca tgaggatctt
6481 atggctgctt atgtggaaaa cacaagcatt accattaaga aacctaatga gctttcacta
6541 gccttaggtt taaaaacaat tgccactcat ggtattgctg caattaatag tgttccttgg
6601 agtaaaattt tggcttatgt caaaccattc ttaggacaag cagcaattac aacatcaaat
6661 tgcgctaaga gattagcaca acgtgtgttt aacaattata tgccttatgt gtttacatta
6721 ttgttccaat tgtgtacttt tactaaaagt accaattcta gaattagagc ttcactacct
6781 acaactattg ctaaaaatag tgttaagagt gttgctaaat tatgtttgga tgccggcatt
6841 aattatgtga agtcacccaa attttctaaa ttgttcacaa tcgctatgtg gctattgttg
6901 ttaagtattt gcttaggttc tctaatctgt gtaactgctg cttttggtgt actcttatct
6961 aattttggtg ctccttctta ttgtaatggc gttagagaat tgtatcttaa ttcgtctaac
7021 gttactacta tggatttctg tgaaggttct tttccttgca gcatttgttt aagtggatta
7081 gactcccttg attcttatcc agctcttgaa accattcagg tgacgatttc atcgtacaag
7141 ctagacttga caattttagg tctggccgct gagtgggttt tggcatatat gttgttcaca
7201 aaattctttt atttattagg tctttcagct ataatgcagg tgttctttgg ctattttgct
7261 agtcatttca tcagcaattc ttggctcatg tggtttatca ttagtattgt acaaatggca
```

FIGURE 7C

```
 7321 cccgtttctg caatggttag gatgtacatc ttctttgctt ctttctacta catatggaag
 7381 agctatgttc atatcatgga tggttgcacc tcttcgactt gcatgatgtg ctataagcgc
 7441 aatcgtgcca cacgcgttga gtgtacaact attgttaatg gcatgaagag atctttctat
 7501 gtctatgcaa atggaggccg tggcttctgc aagactcaca attggaattg tctcaattgt
 7561 gacacatttt gcactggtag tacattcatt agtgatgaag ttgctcgtga tttgtcactc
 7621 cagtttaaaa gaccaatcaa ccctactgac cagtcatcgt atattgttga tagtgttgct
 7681 gtgaaaaatg gcgcgcttca cctctacttt gacaaggctg gtcaaaagac ctatgagaga
 7741 catccgctct cccattttgt caatttagac aatttgagag ctaacaacac taaaggttca
 7801 ctgcctatta atgtcatagt ttttgatggc aagtccaaat gcgacgagtc tgcttctaag
 7861 tctgcttctg tgtactacag tcagctgatg tgccaaccta ttctgttgct tgaccaagtt
 7921 cttgtatcag acgttggaga tagtactgaa gtttccgtta agatgtttga tgcttatgtc
 7981 gacacctttt cagcaacttt tagtgttcct atggaaaaac ttaaggcact tgttgctaca
 8041 gctcacagcg agttagcaaa gggtgtagct ttagatggtg tcctttctac attcgtgtca
 8101 gctgcccgac aaggtgttgt tgataccgat gttgacacaa aggatgttat tgaatgtctc
 8161 aaactttcac atcactctga cttagaagtg acaggtgaca gttgtaacaa tttcatgctc
 8221 acctataata aggttgaaaa catgacgccc agagatcttg gcgcatgtat tgactgtaat
 8281 gcaaggcata tcaatgccca agtagcaaaa agtcacaatg tttcactcat ctggaatgta
 8341 aaagactaca tgtctttatc tgaacagctg cgtaaacaaa ttcgtagtgc tgccaagaag
 8401 aacaacatac cttttagact aacttgtgct acaactagac aggttgtcaa tgtcataact
 8461 actaaaatct cactcaaggg tggtaagatt gttagtactt gttttaaact tatgcttaag
 8521 gccacattat tgtgcgttct tgctgcattg gtttgttata tcgttatgcc agtacataca
 8581 ttgtcaatcc atgatggtta cacaaatgaa atcattggtt acaaagccat tcaggatggt
 8641 gtcactcgtg acatcatttc tactgatgat tgttttgcaa ataaacatgc tggttttgac
 8701 gcatggttta gccagcgtgg tggttcatac aaaaatgaca aaagctgccc tgtagtagct
 8761 gctatcatta caagagagat tggtttcata gtgcctggct taccgggtac tgtgctgaga
 8821 gcaatcaatg gtgacttctt gcattttcta cctcgtgttt ttagtgctgt tggcaacatt
 8881 tgctacacac cttccaaact cattgagtat agtgattttg ctacctctgc ttgcgttctt
 8941 gctgctgagt gtacaatttt taaggatgct atgggcaaac ctgtgccata ttgttatgac
 9001 actaatttgc tagagggttc tatttcttat agtgagcttc gtccagacac tcgttatgtg
 9061 cttatggatg gttccatcat acagtttcct aacacttacc tggagggttc tgttagagta
 9121 gtaacaactt ttgatgctga gtactgtaga catggtacat gcgaaaggtc agaagtaggt
 9181 atttgcctat ctaccagtgg tagatgggtt cttaataatg agcattacag agctctatca
 9241 ggagttttct gtggtgttga tgcgatgaat ctcatagcta acatctttac tcctcttgtg
 9301 caacctgtgg gtgctttaga tgtgtctgct tcagtagtgg ctggtggtat tattgccata
 9361 ttggtgactt gtgctgccta ctactttatg aaattcagac gtgtttttgg tgagtacaac
 9421 catgttgttg ctgctaatgc acttttgttt ttgatgtctt tcactatact ctgtctggta
 9481 ccagcttaca gctttctgcc gggagtctac tcagtctttt acttgtactt gacattctat
 9541 ttcaccaatg atgtttcatt cttggctcac cttcaatggt ttgccatgtt ttctcctatt
 9601 gtgccttttt ggataacagc aatctatgta ttctgtattt ctctgaagca ctgccattgg
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 9721 gaggaggctg ctttgtgtac ctttttgctc aacaaggaaa tgtacctaaa attgcgtagc
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10081 gatgacacag tatactgtcc aagacatgtc atttgcacag cagaagacat gcttaatcct
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10981 caaagtacac agtggtcact gtttttcttt gtttacgaga atgctttctt gccatttact
```

FIGURE 7D

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11581 cttttctgtt tactcaaccg ttacttcagg cttactcttg gtgtttatga ctacttggtc
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11761 gctactgtac agtctaaaat gtctgacgta aagtgcacat ctgtggtact gctctcggtt
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FIGURE 7E

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FIGURE 7F

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FIGURE 7G

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23461 gtgctagtta ccatacagtt tctttattac gtagtactag ccaaaaatct attgtggctt
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23641 ccgtagattg taatatgtac atctgcggag attctactga atgtgctaat ttgcttctcc
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25681 attactttat gatgccaact actttgtttg ctggcacaca cataactatg actactgtat
25741 accatataac agtgtcacag atacaattgt cgttactgaa ggtgacggca tttcaacacc
25801 aaaactcaaa gaagactacc aaattggtgg ttattctgag gataggcact caggtgttaa
25861 agactatgtc gttgtacatg gctatttcac cgaagtttac taccagcttg agtctacaca

FIGURE 7H

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25981 agacccaccg aatgtgcaaa tacacacaat cgacggctct tcaggagttg ctaatccagc
26041 aatggatcca atttatgatg agccgacgac gactactagc gtgcctttgt aagcacaaga
26101 aagtgagtac gaacttatgt actcattcgt ttcggaagaa acaggtacgt taatagttaa
26161 tagcgtactt ctttttcttg ctttcgtggt attcttgcta gtcacactag ccatccttac
26221 tgcgcttcga ttgtgtgcgt actgctgcaa tattgttaac gtgagtttag taaaaccaac
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26401 gcagacaacg gtactattac cgttgaggag cttaaacaac tcctggaaca atggaaccta
26461 gtaataggtt tcctattcct agcctggatt atgttactac aatttgccta ttctaatcgg
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26761 cctctccggg ggacaattgt gaccagaccg ctcatggaaa gtgaacttgt cattggtgct
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26881 gacctgccaa aagagatcac tgtggctaca tcacgaacgc tttcttatta caaattagga
26941 gcgtcgcagc gtgtaggcac tgattcaggt tttgctgcat acaaccgcta ccgtattgga
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29161 aaagacaacg tcatactgct gaacaagcac attgacgcat acaaaacatt cccaccaaca
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29461 tactcttgtg cagaatgaat tctcgtaact aaacagcaca agtaggttta gttaacttta
29521 atctcacata gcaatcttta atcaatgtgt aacattaggg aggacttgaa agagccacca
29581 cattttcatc gaggccacgc ggagtacgat cgagggtaca gtgaataatg ctagggagag

FIGURE 7I

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29641 ctgcctatat ggaagagccc taatgtgtaa aattaatttt agtagtgcta tccccatgtg
29701 attttaatag cttcttagga gaatgac
```

FIGURE 8 A

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181 tctgcagact gcttacggtt tcgtccgtgt tgcagtcgat catcagcata cctaggtttc
241 gtccgggtgt gaccgaaagg taagatggag agccttgttc ttggtgtcaa cgagaaaaca
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FIGURE 8 B

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3121 acagaggatg attatcaagg tctccctctg gaatttggtg cctcagctga aacagttcga
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FIGURE 8 C

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7141 ctagacttga caattttagg tctggccgct gagtgggttt tggcatatat gttgttcaca
7201 aaattctttt atttattagg tctttcagct ataatgcagg tgttctttgg ctattttgct
7261 agtcatttca tcagcaattc ttggctcatg tggtttatca ttagtattgt acaaatggca
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7381 agctatgttc atatcatgga tggttgcacc tcttcgactt gcatgatgtg ctataagcgc
7441 aatcgtgcca cacgcgttga gtgtacaact attgttaatg gcatgaagag atctttctat
7501 gtctatgcaa atggaggccg tggcttctgc aagactcaca attggaattg tctcaattgt
7561 gacacatttt gcactggtag tacattcatt agtgatgaag ttgctcgtga tttgtcactc
7621 cagtttaaaa gaccaatcaa ccctactgac cagtcatcgt atattgttga tagtgttgct
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7741 catccgctct cccattttgt caatttagac aatttgagag ctaacaacac taaaggttca
7801 ctgcctatta atgtcatagt ttttgatggc aagtccaaat gcgacgagtc tgcttctaag
7861 tctgcttctg tgtactacag tcagctgatg tgccaaccta ttctgttgct tgaccaagct
7921 cttgtatcag acgttggaga tagtactgaa gtttccgtta agatgtttga tgcttatgtc
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8041 gctcacagcg agttagcaaa gggtgtagct ttagatggtg tcctttctac attcgtgtca
8101 gctgcccgac aaggtgttgt tgataccgat gttgacacaa aggatgttat tgaatgtctc
8161 aaactttcac atcactctga cttagaagtg acaggtgaca gttgtaacaa tttcatgctc
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8461 actaaaatct cactcaaggg tggtaagatt gttagtactt gttttaaact tatgcttaag
8521 gccacattat tgtgcgttct tgctgcattg gtttgttata tcgttatgcc agtacataca
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8641 gtcactcgtg acatcatttc tactgatgat tgttttgcaa ataaacatgc tggttttgac
8701 gcatggttta gccagcgtgg tggttcatac aaaaatgaca aaagctgccc tgtagtagct
8761 gctatcatta caagagagat tggtttcata gtgcctggct taccgggtac tgtgctgaga
8821 gcaatcaatg gtgacttctt gcattttcta cctcgtgttt ttagtgctgt tggcaacatt
8881 tgctacacac cttccaaact cattgagtat agtgattttg ctacctctgc ttgcgttctt
8941 gctgctgagt gtacaatttt taaggatgct atgggcaaac ctgtgccata ttgttatgac
9001 actaatttgc tagagggttc tatttcttat agtgagcttc gtccagacac tcgttatgtg
9061 cttatggatg gttccatcat acagtttcct aacacttacc tggagggttc tgttagagta
9121 gtaacaactt ttgatgctga gtactgtaga catggtacat gcgaaaggtc agaagtaggt
9181 atttgcctat ctaccagtgg tagatgggtt cttaataatg agcattacag agctctatca
9241 ggagttttct gtggtgttga tgcgatgaat ctcatagcta acatctttac tcctcttgtg

FIGURE 8 D

9301 caacctgtgg gtgctttaga tgtgtctgct tcagtagtgg ctggtggtat tattgccata
9361 ttggtgactt gtgctgccta ctactttatg aaattcagac gtgtttttgg tgagtacaac
9421 catgttgttg ctgctaatgc acttttgttt ttgatgtctt tcactatact ctgtctggta
9481 ccagcttaca gctttctgcc gggagtctac tcagtctttt acttgtactt gacattctat
9541 ttcaccaatg atgtttcatt cttggctcac cttcaatggt ttgccatgtt ttctcctatt
9601 gtgccttttt ggataacagc aatctatgta ttctgtattt ctctgaagca ctgccattgg
9661 ttctttaaca actatcttag gaaaagagtc atgtttaatg gagttacatt tagtaccttc
9721 gaggaggctg ctttgtgtac ctttttgctc aacaaggaaa tgtacctaaa attgcgtagc
9781 gagacactgt tgccacttac acagtataac aggtatcttg ctctatataa caagtacaag
9841 tatttcagtg gagccttaga tactaccagc tatcgtgaag cagcttgctg ccacttagca
9901 aaggctctaa atgactttag caactcaggt gctgatgttc tctaccaacc accacagaca
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10081 gatgacacag tatactgtcc aagacatgtc atttgcacag cagaagacat gcttaatcct
10141 aactatgaag atctgctcat tcgcaaatcc aaccatagct ttcttgttca ggctggcaat
10201 gttcaacttc gtgttattgg ccattctatg caaaattgtc tgcttaggct taaagttgat
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10321 tcagttctag catgctacaa tggttcacca tctggtgttt atcagtgtgc catgagacct
10381 aatcatacca ttaaaggttc tttccttaat ggatcatgtg gtagtgttgg ttttaacatt
10441 gattatgatt gcgtgtcttt ctgctatatg catcatatgg agcttccaac aggagtacac
10501 gctggtactg acttagaagg taaattctat ggtccatttg ttgacagaca aactgcacag
10561 gctgcaggta cagacacaac cataacatta aatgttttgg catggctgta tgctgctgtt
10621 atcaatggtg ataggtggtt tcttaataga ttcaccacta ctttgaatga ctttaacctt
10681 gtggcaatga agtacaacta tgaacctttg acacaagatc atgttgacat attgggacct
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10801 cagaatggta tgaatggtcg tactatcctt ggtagcacta ttttagaaga tgagtttaca
10861 ccatttgatg ttgttagaca atgctctggt gttaccttcc aaggtaagtt caagaaaatt
10921 gttaagggca ctcatcattg gatgctttta actttcttga catcactatt gattcttgtt
10981 caaagtacac agtggtcact gtttttcttt gtttacgaga atgctttctt gccatttact
11041 cttggtatta tggcaattgc tgcatgtgct atgctgcttg ttaagcataa gcacgcattc
11101 ttgtgcttgt ttctgttacc ttctcttgca acagttgctt actttaatat ggtctacatg
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11341 acacttgttt acaaagtcta ctatggtaat gctttagatc aagctatttc catgtgggcc
11401 ttagttattt ctgtaacctc taactattct ggtgtcgtta cgactatcat gtttttagct
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11581 cttttctgtt tactcaaccg ttacttcagg cttactcttg gtgtttatga ctacttggtc
11641 tctacacaag aatttaggta tatgaactcc caggggcttt tgcctcctaa gagtagtatt
11701 gatgctttca agcttaacat taagttgttg ggtattggag gtaaaccatg tatcaaggtt
11761 gctactgtac agtctaaaat gtctgacgta aagtgcacat ctgtggtact gctctcggtt
11821 cttcaacaac ttagagtaga gtcatcttct aaattgtggg cacaatgtgt acaactccac
11881 aatgatattc ttcttgcaaa agacacaact gaagctttcg agaagatggt ttctcttttg
11941 tctgttttgc tatccatgca gggtgctgta gacattaata ggttgtgcga ggaaatgctc
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12061 gcttatgcca ctgcccagga ggcctatgag caggctgtag ctaatggtga ttctgaagtc
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12241 gcaagatctg aggacaagag ggcaaaagta actagtgcta tgcaaacaat gctcttcact
12301 atgcttagga agcttgataa tgatgcactt aacaacatta tcaacaatgc gcgtgatggt
12361 tgtgttccac tcaacatcat accattgact acagcagcca aactcatggt tgttgtccct

FIGURE 8 E

12421 gattatggta cctacaagaa cacttgtgat ggtaacacct ttacatatgc atctgcactc
12481 tgggaaatcc agcaagttgt tgatgcggat agcaagattg ttcaacttag tgaaattaac
12541 atggacaatt caccaaattt ggcttggcct cttattgtta cagctctaag agccaactca
12601 gctgttaaac tacagaataa tgaactgagt ccagtagcac tacgacagat gtcctgtgcg
12661 gctggtacca cacaaacagc ttgtactgat gacaatgcac ttgcctacta taacaattcg
12721 aagggaggta ggtttgtgct ggcattacta tcagaccacc aagatctcaa atgggctaga
12781 ttccctaaga gtgatggtac aggtacaatt tacacagaac tggaaccacc ttgtaggttt
12841 gttacagaca caccaaaagg gcctaaagtg aaatacttgt acttcatcaa aggcttaaac
12901 aacctaaata gaggtatggt gctgggcagt ttagctgcta cagtacgtct tcaggctgga
12961 aatgctacag aagtacctgc caattcaact gtgctttcct tctgtgcttt tgcagtagac
13021 cctgctaaag catataagga ttacctagca agtggaggac aaccaatcac caactgtgtg
13081 aagatgttgt gtacacacac tggtacagga caggcaatta ctgtaacacc agaagctaac
13141 atggaccaag agtcctttgg tggtgcttca tgttgtctgt attgtagatg ccacattgac
13201 catccaaatc ctaaaggatt ctgtgacttg aaaggtaagt acgtccaaat acctaccact
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13321 tggaaaggtt atggctgtag ttgtgaccaa ctccgcgaac ccttgatgca gtctgcggat
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13441 caggcactag tactgatgtc gtctacaggg cttttgatat ttacaacgaa aaagttgctg
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13621 agactattta taacttggtt aaagattgtc cagcggttgc tgtccatgac tttttcaagt
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13981 tactgacatt agataatcag gatcttaatg ggaactggta cgatttcggt gatttcgtac
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14101 tcctcacttt gactagggca ttggctgctg agtcccatat ggatgctgat ctcgcaaaac
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15181 ctgtttacag tgatgtagaa actccacacc ttatgggttg ggattatcca aaatgtgaca
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15361 gtgagatggt catgtgtggc ggctcactat atgttaaacc aggtggaaca tcatccggtg
15421 atgctacaac tgcttatgct aatagtgtct ttaacatttg tcaagctgtt acagccaatg
15481 taaatgcact tctttcaact gatggtaata agatagctga caagtatgtc cgcaatctac

FIGURE 8 F

15541 aacacaggct ctatgagtgt ctctatagaa atagggatgt tgatcatgaa ttcgtggatg
15601 agttttacgc ttacctgcgt aaacatttct ccatgatgat tctttctgat gatgccgttg
15661 tgtgctataa cagtaactat gcggctcaag gtttagtagc tagcattaag aactttaagg
15721 cagttcttta ttatcaaaat aatgtgttca tgtctgaggc aaaatgttgg actgagactg
15781 accttactaa aggacctcac gaattttgct cacagcatac aatgctagtt aaacaaggag
15841 atgattacgt gtacctgcct tacccagatc catcaagaat attaggcgca ggctgttttg
15901 tcgatgatat tgtcaaaaca gatggtacac ttatgattga aaggttcgtg tcactggcta
15961 ttgatgctta cccacttaca aaacatccta atcaggagta tgctgatgtc tttcacttgt
16021 atttacaata cattagaaag ttacatgatg agcttactgg ccacatgttg gacatgtatt
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16201 cttcacttcg ttgcggtgcc tgtattagga gaccattcct atgttgcaag tgctgctatg
16261 accatgtcat ttcaacatca cacaaattag tgttgtctgt taatccctat gtttgcaatg
16321 ccccaggttg tgatgtcact gatgtgacac aactgtatct aggaggtatg agctattatt
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16621 ccactgtacg cgaagtactc tctgacagag aattgcatct ttcatgggag gttggaaaac
16681 ctagaccacc attgaacaga aactatgtct ttactggtta ccgtgtaact aaaaatagta
16741 aagtacagat tggagagtac acctttgaaa aaggtgacta tggtgatgct gttgtgtaca
16801 gaggtactac gacatacaag ttgaatgttg gtgattactt tgtgttgaca tctcacactg
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17041 ccatcggact tgctctctat tacccatctg ctcgcatagt gtatacggca tgctctcatg
17101 cagctgttga tgccctatgt gaaaaggcat taaaatattt gcccatagat aaatgtagta
17161 gaatcatacc tgcgcgtgcg cgcgtagagt gttttgataa attcaaagtg aattcaacac
17221 tagaacagta tgttttctgc actgtaaatg cattgccaga aacaactgct gacattgtag
17281 tctttgatga aatctctatg gctactaatt atgacttgag tgttgtcaat gctagacttc
17341 gtgcaaaaca ctacgtctat attggcgatc ctgctcaatt accagccccc cgcacattgc
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17521 tgagtgcttt agtttatgac aataagctaa aagcacacaa ggataagtca gctcaatgct
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17641 aaataggcgt tgtaagagaa tttcttacac gcaatcctgc ttggagaaaa gctgttttta
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17761 ctgttgattc atcacagggt tctgaatatg actatgtcat attcacacaa actactgaaa
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18481 gtgatacact gaaaggattg tcagacagag tcgtgttcgt cctttgggcg catggctttg
18541 agcttacatc aatgaagtac tttgtcaaga ttggacctga aagaacgtgt tgtctgtgtg
18601 acaaacgtgc aacttgcttt tctacttcat cagatactta tgcctgctgg aatcattctg

FIGURE 8 G

18661 tgggttttga ctatgtctat aacccattta tgattgatgt tcagcagtgg ggctttacgg
18721 gtaaccttca gagtaaccat gaccaacatt gccaggtaca tggaaatgca catgtggcta
18781 gttgtgatgc tatcatgact agatgtttag cagtccatga gtgctttgtt aagcgcgttg
18841 attggtctgt tgaataccct attataggag atgaactgag ggttaattct gcttgcagaa
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19081 ctacacatca cgataaattc actgatggtg tttgtttgtt ttggaattgt aacgttgatc
19141 gttacccagc caatgcaatt gtgtgtaggt ttgacacaag agtcttgtca aacttgaact
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19321 cttgtgagtc tcatggcaaa caagtagtgt cggatattga ttatgttcca ctcaaatctg
19381 ctacgtgtat tacacgatgc aatttaggtg gtgctgtttg cagacaccat gcaaatgagt
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20401 aaacaggttc atcaaaatgt gtgtgttctg tgattgatct tttacttgat gactttgtcg
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20701 aaggaataat gatgaatgtc gcaaagtata ctcaactgtg tcaatactta aatacactta
20761 ctttagctgt accctacaac atgagagtta ttcactttgg tgctggctct gataaaggag
20821 ttgcaccagg tacagctgtg ctcagacaat ggttgccaac tggcacacta cttgtcgatt
20881 cagatcttaa tgacttcgtc tccgacgcag attctacttt aattggagac tgtgcaacag
20941 tacatacggc taataaatgg gaccttatta ttagcgatat gtatgaccct aggaccaaac
21001 atgtgacaaa agagaatgac tctaaagaag ggtttttcac ttatctgtgt ggatttataa
21061 agcaaaaact agccctgggt ggttctatag ctgtaaagat aacagagcat tcttggaatg
21121 ctgaccttta caagcttatg ggccatttct catggtggac agcttttgtt acaaatgtaa
21181 atgcatcatc atcggaagca tttttaattg gggctaacta tcttggcaag ccgaaggaac
21241 aaattgatgg ctataccatg catgctaact acattttctg gaggaacaca aatcctatcc
21301 agttgtcttc ctattcactc tttgacatga gcaaatttcc tcttaaatta agaggaactg
21361 ctgtaatgtc tcttaaggag aatcaaatca atgatatgat ttattctctt ctggaaaaag
21421 gtaggcttat cattagagaa aacaacagag ttgtggtttc aagtgatatt cttgttaaca
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21601 tgaggggggt ttactatcct gatgaaattt ttagatcaga cactctttat ttaactcagg
21661 atttatttct tccattttat tctaatgtta cagggtttca tactattaat catacgtttg
21721 gcaaccctgt catacctttt aaggatggta tttattttgc tgccacagag aaatcaaatg

FIGURE 8 H

21781 ttgtccgtgg ttgggttttt ggttctacca tgaacaacaa gtcacagtcg gtgattatta
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21901 tctttgctgt ttctaaaccc atgggtacac agacacatac tatgatattc gataatgcat
21961 ttaattgcac tttcgagtac atatctgatg ccttttcgct tgatgtttca gaaaagtcag
22021 gtaattttaa acacttacga gagtttgtgt ttaaaaataa agatgggttt ctctatgttt
22081 ataagggcta tcaacctata gatgtagttc gtgatctacc ttctggtttt aacactttga
22141 aacctatttt taagttgcct cttggtatta acattacaaa ttttagagcc attcttacag
22201 ccttttcacc tgctcaagac atttggggca cgtcagctgc agcctatttt gttggctatt
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22561 actcaacatt tttttcaacc tttaagtgct atggcgtttc tgccactaag ttgaatgatc
22621 tttgcttctc caatgtctat gcagattctt ttgtagtcaa gggagatgat gtaagacaaa
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22981 tagtactttc ttttgaactt ttaaatgcac cggccacggt ttgtggacca aaattatcca
23041 ctgaccttat taagaaccag tgtgtcaatt ttaattttaa tggactcact ggtactggtg
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23161 atttcactga ttccgttcga gatcctaaaa catctgaaat attagacatt tcaccttgcg
23221 cttttggggg tgtaagtgta attacacctg gaacaaatgc ttcatctgaa gttgctgttc
23281 tatatcaaga tgttaactgc actgatgttt ctacagcaat tcatgcagat caactcacac
23341 cagcttggcg catatattct actggaaaca atgtattcca gactcaagca ggctgtctta
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23881 ggtcttttat tgaggacttg ctctttaata aggtgacact cgctgatgct ggcttcatga
23941 agcaatatgg cgaatgccta ggtgatatta atgctagaga tctcatttgt gcgcagaagt
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24661 tcaccacagc gccagcaatt tgtcatgaag gcaaagcata cttccctcgt gaaggtgttt
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24781 ttactacaga caatacattt gtctcaggaa attgtgatgt cgttattggc atcattaaca
24841 acacagttta tgatcctctg caacctgagc ttgactcatt caaagaagag ctggacaagt

FIGURE 8 I

24901 acttcaaaaa tcatacatca ccagatgttg atcttggcga catttcaggc attaacgctt
24961 ctgtcgtcaa cattcaaaaa gaaattgacc gcctcaatga ggtcgctaaa aatttaaatg
25021 aatcactcat tgaccttcaa gaattgggaa aatatgagca atatattaaa tggccttggt
25081 atgtttggct cggcttcatt gctggactaa ttgccatcgt catggttaca atcttgcttt
25141 gttgcatgac tagttgttgc agttgcctca agggtgcatg ctcttgtggt tcttgctgca
25201 agtttgatga ggatgactct gagccagttc tcaagggtgt caaattacat tacacataaa
25261 cgaacttatg gatttgttta tgagattttt tactcttaga tcaattactg cacagccagt
25321 aaaaattgac aatgcttctc ctgcaagtac tgttcatgct acagcaacga taccgctaca
25381 agcctcactc cctttcggat ggcttgttat tggcgttgca tttcttgctg tttttcagag
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25501 gttcatttgc aatttactgc tgctatttgt taccatctat tcacatcttt tgcttgtcgc
25561 tgcaggtatg gaggcgcaat ttttgtacct ctatgccttg atatattttc tacaatgcat
25621 caacgcatgt agaattatta tgagatgttg gctttgttgg aagtgcaaat ccaagaaccc
25681 attactttat gatgccaact actttgtttg ctggcacaca cataactatg actactgtat
25741 accatataac agtgtcacag atacaattgt cgttactgaa ggtgacggca tttcaacacc
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25981 agacccaccg aatgtgcaaa tacacacaat cgacggctct tcaggagttg ctaatccagc
26041 aatggatcca atttatgatg agccgacgac gactactagc gtgcctttgt aagcacaaga
26101 aagtgagtac gaacttatgt actcattcgt ttcggaagaa acaggtacgt taatagttaa
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26521 aacaggtttt tgtacataat aaagcttgtt ttcctctggc tcttgtggcc agtaacactt
26581 gcttgttttg tgcttgctgc tgtctacaga attaattggg tgactggcgg gattgcgatt
26641 gcaatggctt gtattgtagg cttgatgtgg cttagctact tcgttgcttc cttcaggctg
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26881 gacctgccaa aagagatcac tgtggctaca tcacgaacgc tttcttatta caaattagga
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27901 gtaatactta tagcactgct tggctttgtg ctctaggaaa ggttttacct tttcatagat
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FIGURE 8 J

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28141 tcaaaccaac gtagtgcccc ccgcattaca tttggtggac ccacagattc aactgacaat
28201 aaccagaatg gaggacgcaa tggggcaagg ccaaaacagc gccgacccca aggtttaccc
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28321 cctcgaggcc agggcgttcc aatcaacacc aatagtggtc cagatgacca aattggctac
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28441 agatggtact tctattacct aggaactggc ccagaagctt cacttcccta cggcgctaac
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28561 ggcacccgca atcctaataa caatgctgcc accgtgctac aacttcctca aggaacaaca
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28741 cctgctcgaa tggctagcgg aggtggtgaa actgccctcg cgctattgct gctagacaga
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28981 ggggaccaag acctaatcag acaaggaact gattacaaac attggccgca aattgcacaa
29041 tttgctccaa gtgcctctgc attctttgga atgtcacgca ttggcatgga agtcacacct
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29161 aaagacaacg tcatactgct gaacaagcac attgacgcat acaaaacatt cccaccaaca
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29281 aagaagcagc ccactgtgac tcttcttcct gcggctgaca tggatgattt ctccagacaa
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29401 accacacaag gcagatgggc tatgtaaacg ttttcgcaat tccgtttacg atacatagtc
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29641 ctgcctatat ggaagagccc taatgtgtaa aattaatttt agtagtgcta tccccatgtg
29701 attttaatag cttcttagga gaatgacaaa aaaaaaaaaa aaaaaaaaaa a

FIGURE 9A

```
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  61 aaaatctgtg tagctgtcgc tcggctgcat gcctagtgca cctacgcagt ataaacaata
 121 ataaatttta ctgtcgttga caagaaacga gtaactcgtc cctcttctgc agactgctta
 181 cggtttcgtc cgtgttgcag tcgatcatca gcatacctag gtttcgtccg ggtgtgaccg
 241 aaaggtaaga tggagagcct tgttcttggt gtcaacgaga aaacacacgt ccaactcagt
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3481 ggagggtctt gtttgctttc tggacataat cttgctaaga agtgtctgca tgttgttgga
3541 cctaacctaa atgcaggtga ggacatccag cttcttaagg cagcatatga aaatttcaat
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FIGURE 9B

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3661 cagtctttac aagtgtgcgt gcagacggtt cgtacacagg tttatattgc agtcaatgac
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3781 gcacctaaac aagaggagcc accaaacaca gaagattcca aaactgagga gaaatctgtc
3841 gtacagaagc ctgtcgatgt gaagccaaaa attaaggcct gcattgatga ggttaccaca
3901 acactggaag aaactaagtt tcttaccaat aagttactct tgtttgctga tatcaatggt
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FIGURE 9C

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FIGURE 9D

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FIGURE 9E

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18121 ctatgatggg tttcaaaatg aattaccaag tcaatggtta ccctaatatg tttatcaccc
18181 gcgaagaagc tattcgtcac gttcgtgcgt ggattggctt tgatgtagag ggctgtcatg
18241 caactagaga tgctgtgggt actaacctac ctctccagct aggattttct acaggtgtta
18301 acttagtagc tgtaccgact ggttatgttg acactgaaaa taacacagaa ttcaccagag
18361 ttaatgcaaa acctccacca ggtgaccagt ttaaacatct tataccactc atgtataaag
18421 gcttgccctg gaatgtagtg cgtattaaga tagtacaaat gctcagtgat acactgaaag
18481 gattgtcaga cagagtcgtg ttcgtccttt gggcgcatgg ctttgagctt acatcaatga

FIGURE 9F

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18541 agtactttgt caagattgga cctgaaagaa cgtgttgtct gtgtgacaaa cgtgcaactt
18601 gcttttctac ttcatcagat acttatgcct gctggaatca ttctgtgggt tttgactatg
18661 tctataaccc atttatgatt gatgttcagc agtggggctt tacgggtaac cttcagagta
18721 accatgacca acattgccag gtacatggaa atgcacatgt ggctagttgt gatgctatca
18781 tgactagatg tttagcagtc catgagtgct ttgttaagcg cgttgattgg tctgttgaat
18841 accctattat aggagatgaa ctgagggtta attctgcttg cagaaaagta caacacatgg
18901 ttgtgaagtc tgcattgctt gctgataagt ttccagttct tcatgacatt ggaaatccaa
18961 aggctatcaa gtgtgtgcct caggctgaag tagaatggaa gttctacgat gctcagccat
19021 gtagtgacaa agcttacaaa atagaggagc tcttctattc ttatgctaca catcacgata
19081 aattcactga tggtgtttgt ttgttttgga attgtaacgt tgatcgttac ccagccaatg
19141 caattgtgtg taggtttgac acaagagtct tgtcaaactt gaacttacca ggctgtgatg
19201 gtggtagttt gtatgtgaat aagcatgcat tccacactcc agctttcgat aaaagtgcat
19261 ttactaattt aaagcaattg cctttctttt actattctga tagtccttgt gagtctcatg
19321 gcaaacaagt agtgtcggat attgattatg ttccactcaa atctgctacg tgtattacac
19381 gatgcaattt aggtggtgct gtttgcagac accatgcaaa tgagtaccga cagtacttgg
19441 atgcatataa tatgatgatt tctgctggat ttagcctatg gatttacaaa caatttgata
19501 cttataacct gtggaataca tttaccaggt tacagagttt agaaaatgtg gcttataatg
19561 ttgttaataa aggacacttt gatggacacg ccggcgaagc acctgtttcc atcattaata
19621 atgctgttta cacaaaggta gatggtattg atgtggagat ctttgaaaat aagacaacac
19681 ttcctgttaa tgttgcattt gagctttggg ctaagcgtaa cattaaacca gtgccagaga
19741 ttaagatact caataatttg ggtgttgata tcgctgctaa tactgtaatc tgggactaca
19801 aaagagaagc cccagcacat gtatctacaa taggtgtctg cacaatgact gacattgcca
19861 agaaacctac tgagagtgct tgttcttcac ttactgtctt gtttgatggt agagtggaag
19921 gacaggtaga ccttttaga aacgcccgta atggtgtttt aataacagaa ggttcagtca
19981 aaggtctaac accttcaaag ggaccagcac aagctagcgt caatggagtc acattaattg
20041 gagaatcagt aaaaacacag tttaactact ttaagaaagt agacggcatt attcaacagt
20101 tgcctgaaac ctactttact cagagcagag acttagagga ttttaagccc agatcacaaa
20161 tggaaactga ctttctcgag ctcgctatgg atgaattcat acagcgatat aagctcgagg
20221 gctatgcctt cgaacacatc gtttatggag atttcagtca tggacaactt ggcggtcttc
20281 atttaatgat aggcttagcc aagcgctcac aagattcacc acttaaatta gaggatttta
20341 tccctatgga cagcacagtg aaaaattact tcataacaga tgcgcaaaca ggttcatcaa
20401 aatgtgtgtg ttctgtgatt gatcttttac ttgatgactt tgtcgagata ataaagtcac
20461 aagatttgtc agtgatttca aaagtggtca aggttacaat tgactatgct gaaatttcat
20521 tcatgctttg gtgtaaggat ggacatgttg aaaccttcta cccaaaacta caagcaagtc
20581 aagcgtggca accaggtgtt gcgatgccta acttgtacaa gatgcaaaga atgcttcttg
20641 aaaagtgtga ccttcagaat tatggtgaaa atgctgttat accaaaagga ataatgatga
20701 atgtcgcaaa gtatactcaa ctgtgtcaat acttaaatac acttacttta gctgtaccct
20761 acaacatgag agttattcac tttggtgctg gctctgataa aggagttgca ccaggtacag
20821 ctgtgctcag acaatggttg ccaactggca cactacttgt cgattcagat cttaatgact
20881 tcgtctccga cgcagattct actttaattg gagactgtgc aacagtacat acggctaata
20941 aatgggacct tattattagc gatatgtatg accctaggac caaacatgtg acaaaagaga
21001 atgactctaa agaagggttt ttcacttatc tgtgtggatt tataaagcaa aaactagccc
21061 tgggtggttc tatagctgta aagataacag agcattcttg gaatgctgac ctttacaagc
21121 ttatgggcca tttctcatgg tggacagctt ttgttacaaa tgtaaatgca tcatcatcgg
21181 aagcattttt aattggggct aactatcttg gcaagccgaa ggaacaaatt gatggctata
21241 ccatgcatgc taactacatt ttctggagga acacaaatcc tatccagttg tcttcctatt
21301 cactctttga catgagcaaa tttcctctta aattaagagg aactgctgta atgtctctta
21361 aggagaatca aatcaatgat atgatttatt ctcttctgga aaaaggtagg cttatcatta
21421 gagaaaacaa cagagttgtg gtttcaagtg atattcttgt taacaactaa acgaacatgt
21481 ttatttttctt attatttctt actctcacta gtggtagtga ccttgaccgg tgcaccactt
21541 ttgatgatgt tcaagctcct aattacactc aacatacttc atctatgagg ggggtttact
21601 atcctgatga aatttttaga tcagacactc tttatttaac tcaggattta tttcttccat
21661 tttattctaa tgttacaggg tttcatacta ttaatcatac gtttgacaac cctgtcatac
21721 cttttaagga tggtatttat tttgctgcca cagagaaatc aaatgttgtc cgtggttggg
21781 tttttggttc taccatgaac aacaagtcac agtcggtgat tattattaac aattctacta
21841 atgttgttat acgagcatgt aactttgaat tgtgtgacaa ccctttcttt gctgtttcta
21901 aacccatggg tacacagaca catactatga tattcgataa tgcatttaat tgcactttcg
21961 agtacatatc tgatgccttt tcgcttgatg tttcagaaaa gtcaggtaat tttaaacact
22021 tacgagagtt tgtgtttaaa aataaagatg ggtttctcta tgtttataag ggctatcaac
22081 ctatagatgt agttcgtgat ctaccttctg gttttaacac tttgaaacct atttttaagt
22141 tgcctcttgg tattaacatt acaaatttta gagccattct tacagccttt tcacctgctc
22201 aagacacttg gggcacgtca gctgcagcct attttgttgg ctatttaaag ccaactacat
```

FIGURE 9G

22261 ttatgctcaa gtatgatgaa aatggtacaa tcacagatgc tgttgattgt tctcaaaatc
22321 cacttgctga actcaaatgc tctgttaaga gctttgagat tgacaaagga atttaccaga
22381 cctctaattt cagggttgtt ccctcaggag atgttgtgag attccctaat attacaaact
22441 tgtgtccttt tggagaggtt tttaatgcta ctaaattccc ttctgtctat gcatgggaga
22501 gaaaaaaaat ttctaattgt gttgctgatt actctgtgct ctacaactca acatttttt
22561 caacctttaa gtgctatggc gtttctgcca ctaagttgaa tgatctttgc ttctccaatg
22621 tctatgcaga ttcttttgta gtcaagggag atgatgtaag acaaatagcg ccaggacaaa
22681 ctggtgttat tgctgattat aattataaat tgccagatga tttcatgggt tgtgtccttg
22741 cttggaatac taggaacatt gatgctactt caactggtaa ttataattat aaatataggt
22801 atcttagaca tggcaagctt aggccctttg agagagacat atctaatgtg ccttttctccc
22861 ctgatggcaa accttgcacc ccacctgctc ttaattgtta ttggccatta aatgattatg
22921 gtttttacac cactactggc attggctacc aaccttacag agttgtagta ctttcttttg
22981 aacttttaaa tgcaccggcc acggtttgtg gaccaaaatt atccactgac cttattaaga
23041 accagtgtgt caattttaat tttaatggac tcactggtac tggtgtgtta actccttctt
23101 caaagagatt tcaaccattt caacaatttg gccgtgatgt ttctgatttc actgattccg
23161 ttcgagatcc taaaacatct gaaatattag acatttcacc ttgctctttt gggggtgtaa
23221 gtgtaattac acctggaaca aatgcttcat ctgaagttgc tgttctatat caagatgtta
23281 actgcactga tgtttctaca gcaattcatg cagatcaact cacaccagct tggcgcatat
23341 attctactgg aaacaatgta ttccagactc aagcaggctg tcttatagga gctgagcatg
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23461 cagtttcttt attacgtagt actagccaaa aatctattgt ggcttatact atgtctttag
23521 gtgctgatag ttcaattgct tactctaata acaccattgc tatacctact aacttttcaa
23581 ttagcattac tacagaagta atgcctgttt ctatggctaa aacctccgta gattgtaata
23641 tgtacatctg cggagattct actgaatgtg ctaatttgct tctccaatat ggtagctttt
23701 gcacacaact aaatcgtgca ctctcaggta ttgctgctga acaggatcgc aacacacgtg
23761 aagtgttcgc tcaagtcaaa caaatgtaca aaaccccaac tttgaaatat tttggtggtt
23821 ttaatttttc acaaatatta cctgaccctc taaagccaac taagaggtct tttattgagg
23881 acttgctctt taataaggtg acactcgctg atgctggctt catgaagcaa tatggcgaat
23941 gcctaggtga tattaatgct agagatctca tttgtgcgca gaagttcaat ggacttacag
24001 tgttgccacc tctgctcact gatgatatga ttgctgccta cactgctgct ctagttagtg
24061 gtactgccac tgctggatgg acatttggtg ctggcgctgc tcttcaaata ccttttgcta
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24181 aaaaacaaat cgccaaccaa tttaacaagg cgattagtca aattcaagaa tcacttacaa
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24301 acacacttgt taaacaactt agctctaatt ttggtgcaat ttcaagtgtg ctaaatgata
24361 tcctttcgcg acttgataaa gtcgaggcgg aggtacaaat tgacaggtta attacaggca
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24481 cttctgctaa tcttgctgct actaaaatgt ctgagtgtgt tcttggacaa tcaaaaagag
24541 ttgacttttg tggaaagggc taccacctta tgtccttccc acaagcagcc ccgcatggtg
24601 ttgtcttcct acatgtcacg tatgtgccat cccaggagag gaacttcacc acagcgccag
24661 caatttgtca tgaaggcaaa gcatacttcc ctcgtgaagg tgtttttgtg tttaatggca
24721 cttcttggtt tattacacag aggaacttct tttctccaca aataattact acagacaata
24781 catttgtctc aggaaattgt gatgtcgtta ttggcatcat taacaacaca gtttatgatc
24841 ctctgcaacc tgagcttgac tcattcaaag aagagctgga caagtacttc aaaaatcata
24901 catcaccaga tgttgatctt ggcgacattt caggcattaa cgcttctgtc gtcaacattc
24961 aaaaagaaat tgaccgcctc aatgaggtcg ctaaaaattt aaatgaatca ctcattgacc
25021 ttcaagaatt gggaaaatat gagcaatata ttaaatggcc ttggtatgtt tggctcggct
25081 tcattgctgg actaattgcc atcgtcatgg ttacaatctt gctttgttgc atgactagtt
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25261 gtttatgaga ttttttactc ttggatcaat tactgcacag ccagtaaaaa ttgacaatgc
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25381 cggatggctt gttattggcg ttgcatttct tgctgttttt cagagcgcta ccaaaataat
25441 tgcgctcaat aaaagatggc agctagccct ttataagggc ttccagttca tttgcaattt
25501 actgctgcta tttgttacca tctattcaca tcttttgctt gtcgctgcag gtatggaggc
25561 gcaatttttg tacctctatg ccttgatata ttttctacaa tgcatcaacg catgtagaat
25621 tattatgaga tgttggcttt gttggaagtg caaatccaag aacccattac tttatgatgc
25681 caactacttt gtttgctggc acacacataa ctatgactac tgtataccat ataacagtgt
25741 cacagataca attgtcgtta ctgaaggtga cggcatttca acaccaaaac tcaaagaaga
25801 ctaccaaatt ggtggttatt ctgaggatag gcactcaggt gttaaagact atgtcgttgt
25861 acatggctat ttcaccgaag tttactacca gcttgagtct acacaaatta ctacagacac
25921 tggtattgaa aatgctacat tcttcatctt taacaagctt gttaaagacc caccgaatgt

FIGURE 9H

25981 gcaaatacac acaatcgacg gctcttcagg agttgctaat ccagcaatgg atccaattta
26041 tgatgagccg acgacgacta ctagcgtgcc tttgtaagca caagaaagtg agtacgaact
26101 tatgtactca ttcgtttcgg aagaaacagg tacgttaata gttaatagcg tacttctttt
26161 tcttgctttc gtggtattct tgctagtcac actagccatc cttactgcgc ttcgattgtg
26221 tgcgtactgc tgcaatattg ttaacgtgag tttagtaaaa ccaacggttt acgtctactc
26281 gcgtgttaaa aatctgaact cttctgaagg agttcctgat cttctggtct aaacgaacta
26341 actattatta ttattctgtt tggaacttta acattgctta tcatggcaga caacggtact
26401 attaccgttg aggagcttaa acaactcctg gaacaatgga acctagtaat aggtttccta
26461 ttcctagcct ggattatgtt actacaattt gcctattcta atcggaacag gtttttgtac
26521 ataataaagc ttgttttcct ctggctcttg tggccagtaa cacttgcttg ttttgtgctt
26581 gctgctgtct acagaattaa ttgggtgact ggcgggattg cgattgcaat ggcttgtatt
26641 gtaggcttga tgtggcttag ctacttcgtt gcttccttca ggctgtttgc tcgtacccgc
26701 tcaatgtggt cattcaaccc agaaacaaac attcttctca atgtgcctct ccgggggaca
26761 attgtgacca gaccgctcat ggaaagtgaa cttgtcattg gtgctgtgat cattcgtggt
26821 cacttgcgaa tggccggaca ctccctaggg cgctgtgaca ttaaggacct gccaaaagag
26881 atcactgtgg ctacatcacg aacgctttct tattacaaat taggagcgtc gcagcgtgta
26941 ggcactgatt caggttttgc tgcatacaac cgctaccgta ttggaaacta taaattaaat
27001 acagaccacg ccggtagcaa cgacaatatt gctttgctag tacagtaagt gacaacagat
27061 gtttcatctt gttgacttcc aggttacaat agcagagata ttgattatca ttatgaggac
27121 tttcaggatt gctatttgga atcttgacgt tataataagt tcaatagtga gacaattatt
27181 taagcctcta actaagaaga attattcgga gttagatgat gaagaaccta tggagttaga
27241 ttatccataa aacgaacatg aaaattattc tcttcctgac attgattgta tttacatctt
27301 gcgagctata tcactatcag gagtgtgtta gaggtacgac tgtactacta aaagaacctt
27361 gcccatcagg aacatacgag ggcaattcac catttcaccc tcttgctgac aataaatttg
27421 cactaacttg cactagcaca cactttgctt ttgcttgtgc tgacggtact cgacatacct
27481 atcagctgcg tgcaagatca gtttcaccaa aacttttcat cagacaagag gaggttcaac
27541 aagagctcta ctcgccactt tttctcattg ttgctgctct agtattttta atactttgct
27601 tcaccattaa gagaaagaca gaatgaatga gctcacttta attgacttct atttgtgctt
27661 tttagccttt ctgctattcc ttgttttaat aatgcttatt atattttggt tttcactcga
27721 aatccaggat ctagaagaac cttgtaccaa agtctaaacg aacatgaaac ttctcattgt
27781 tttgacttgt atttctctat gcagttgcat acgcactgta gtacagcgct gtgcatctaa
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27901 ctgcttggct ttgtgctcta ggaaaggttt tacctttca tagatggcac actatggttc
27961 aaacatgcac acctaatgtt actatcaact gtcaagatcc agctggtggt gcgcttatag
28021 ctaggtgttg gtaccttcat gaaggtcacc aaactgctgc atttagagac gtacttgttg
28081 ttttaaataa acgaacaaat taaaatgtct gataatggac cccaatcaaa ccaacgtagt
28141 gccccccgca ttacatttgg tggacccaca gattcaactg acaataacca gaatggagga
28201 cgcaatgggg caaggccaaa acagcgccga ccccaaggtt tacccaataa tactgcgtct
28261 tggttcacag ctctcactca gcatggcaag gaggaactta gattccctcg aggccagggc
28321 gttccaatca acaccaatag tggtccagat gaccaaattg gctactaccg aagagctacc
28381 cgacgagttc gtggtggtga cggcaaaatg aaagagctca gccccagatg gtacttctat
28441 tacctaggaa ctggcccaga agcttcactt ccctacggcg ctaacaaaga aggcatcgta
28501 tgggttgcaa ctgagggagc cttgaataca cccaaagacc acattggcac ccgcaatcct
28561 aataacaatg ctgccaccgt gctacaactt cctcaaggaa caacattgcc aaaaggcttc
28621 tacgcagagg gaagcagagg cggcagtcaa gcctcttctc gctcctcatc acgtagtcgc
28681 ggtaattcaa gaaattcaac tcctggcagc agtaggggaa attctcctgc tcgaatggct
28741 agcggaggtg gtgaaactgc cctcgcgcta ttgctgctag acagattgaa ccagcttgag
28801 agcaaagttt ctggtaaagg ccaacaacaa caaggccaaa ctgtcactaa gaaatctgct
28861 gctgaggcat ctaaaaagcc tcgccaaaaa cgtactgcca caaaacagta caacgtcact
28921 caagcatttg ggagacgtgg tccagaacaa acccaaggaa atttcgggga ccaagaccta
28981 atcagacaag gaactgatta caaacattgg ccgcaaattg cacaatttgc tccaagtgcc
29041 tctgcattct ttggaatgtc acgcattggc atggaagtca caccttcggg aacatggctg
29101 acttatcatg gagccattaa attggatgac aaagatccac aattcaaaga caacgtcata
29161 ctgctgaaca agcacattga cgcatacaaa acattcccac caacagagcc taaaaaggac
29221 aaaaagaaaa agactgatga agctcagcct ttgccgcaga gacaaaagaa gcagcccact
29281 gtgactcttc ttcctgcggc tgacatggat gatttctcca gacaacttca aaattccatg
29341 agtggagctt ctgctgattc aactcaggca taaacactca tgatgaccac acaaggcaga
29401 tgggctatgt aaacgttttc gcaattccgt ttacgataca tagtctactc ttgtgcagaa
29461 tgaattctcg taactaaaca gcacaagtag gtttagttaa ctttaatctc acatagcaat
29521 ctttaatcaa tgtgtaacat tagggaggac ttgaaagagc caccacattt tcatcgaggc
29581 cacgcggagt acgatcgagg gtacagtgaa taatgctagg gagagctgcc tatatggaag

FIGURE 9I

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29641 agccctaatg tgtaaaatta attttagtag tgctatcccc atgtgatttt aatagcttct
29701 taggagaatg acaaaaaaaa aaaaaaaaaa aaaaaa
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FIGURE 10

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   1 tctgtgtagc tgtcgctcgg ctgcatgcct agtgcaccta cgcagtataa acaataataa
  61 attttactgt cgttgacaag aaacgagtaa ctcgtccctc ttctgcagac tgcttacggt
 121 ttcgtccgtg ttgcagtcga tcatcagcat acctaggttt cgtccgggtg tgaccgaaag
 181 gtaagatgga gagccttgtt cttggtgtca acgagaaaac acacgtccaa ctcagtttgc
 241 ctgtccttca ggttagagac gtgctagtgc gtggcttcgg ggactctgtg gaagaggccc
 301 tatcggaggc acgtgaacac ctcaaaaatg gcacttgtgg tctagtagag ctggaaaaag
 361 gcgtactgcc ccagcttgaa cagccctatg tgttcattaa acgttctgat gccttaagca
 421 ccaatcacgg ccacaaggtc gttgagctgg ttgcagaaat ggacggcatt cagtacggtc
 481 gtagcggtat aacactggga gtactcgtgc cacatgtggg cgaaacccca attgcatacc
 541 gcaatgttct tcttcgtaag aacggtaata agggagccgg tggtcatagc tatggcatcg
 601 atctaaagtc ttatgactta ggtgacgagc ttggcactga tcccattgaa gattatgaac
 661 aaaactggaa cactaagcat ggcagtggtg cactccgtga actcactcgt gagctcaatg
 721 gaggtgtagt cactcgctat gtcgacaaca atttctgtgg cccagatggg taccctcttg
 781 attgcatcaa agattttcta gcacgcgcgg gcaagtcaat gtgcactctt tccgaacaac
 841 ttgattacat cgagtcgaag agaggtgtct actgctgccg tgaccatgag catgaaattg
 901 cctggttcac tgagcgctct gataagagct gcgagcacca gacacccttc gaaattaaga
 961 gtgccaagaa atttgacact ttcaaagggg aatgcccaaa gtttgtgttt cctcttaact
1021 caaaagtcaa agtcattcaa ccacgtgttg aaaagaaaaa gactgagggt ttcatggggc
1081 gtatacgctc tgtgtaccct gttgcatctc cacaggagtg taacaatatg cacttgtcta
1141 ccttgatgaa atgtaatcat tgcgatgaag tttcatggca gacgtgcgac tttctgaaag
1201 ccacttgtga acattgtggc actgaaaatt tagttattga aggacctact acatgtgggt
1261 acctacctac taatgctgta gtgaaaatgc catgtcctgc ctgtcaagac ccagagattg
1321 gacctgagca tagtgttgca gattatcaca accactcaaa cattgaaact cgactccgca
1381 agggaggtag gactagatgt tttggaggct gtgtgtttgc ctatgttggc tgctataata
1441 agcgtgccta ctgggttcct cgtgctagtg ctgatattgg ctcaggccat actggcatta
1501 ctggtgacaa tgtggagacc ttgaatgagg atctccttga gatactgagt cgtgaacgtg
1561 ttaacattaa cattgttggc gattttcatt tgaatgaaga ggttgccatc attttggcat
1621 ctttctctgc ttctacaagt gcctttattg acactataaa gagtcttgat tacaagtctt
1681 tcaaaaccat tgttgagtcc tgcggt
```

FIGURE 11A

```
   1 agtgttttat tagcacttca acagcttgaa gtcaaattca atgcaccagc acttcaagag
  61 gcttattata gagcccgtgc tggtgatgct gctaactttt gtgcactcat actcgcttac
 121 agtaataaaa ctgttggcga gcttggtgat gtcagagaaa ctatgaccca tcttctacag
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 661 gggtattata aaaaggataa tgcttactat acagagcagc ctatagacct tgtaccaact
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 781 gctgatgatt taaatcaaat gacaggcttc acaaagccag cttcacgaga gctatctgtc
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FIGURE 11B

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3841 gatggttcca tcatacagtt tcctaacact tacctggagg gttctgttag agtagtaaca
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FIGURE 11C

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FIGURE 12A

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3061 ctcactgatg atatgattgc tgcctacact gctgctctag ttagtggtac tgccactgct
3121 ggatggacat ttggtgctgg cgctgctctt caaatacctt ttgctatgca aatggcatat
3181 aggttcaatg gcattggagt tacccaaaat gttctctatg agaaccaaaa acaaatcgcc
3241 aaccaattta acaaggcgat tagtcaaatt caagaatcac ttacaacaac atcaactgca
3301 ttgggcaagc tgcaagacgt tgttaaccag aatgctcaag cattaaacac acttgttaaa
3361 caacttagct ctaattttgg tgcaatttca agtgtgctaa atgatatcct ttcgcgactt
3421 gataaagtcg aggcggaggt acaaattgac aggttaatta caggcagact tcaaagcctt
3481 caaacctatg taacacaaca actaatcagg gctgctggaa tcagggcttc tgctaatctt
3541 gctgctacta aaatgtctga gtgtgttctt ggacaatcaa aaagagttga cttttgtgga
3601 aagggctacc accttatgtc cttcccacaa gcagccccgc atggtgttgt cttcctacat
```

FIGURE 12B

```
3661 gtcacgtatg tgccatccca ggagaggaac ttcaccacag cgccagcaat ttgtcatgaa
3721 ggcaaagcat acttccctcg tgaaggtgtt tttgtgttta atggcacttc ttggtttatt
3781 acacagagga acttcttttc tccacaaata attactacag acaatacatt tgtctcagga
3841 aattgtgatg tcgttattgg catcattaac aacacagttt atgatcctct gcaacctgag
3901 cttgactcat tcaaagaaga gctggacaag tacttcaaaa atcatacatc accagatgtt
3961 gatcttggcg acatttcagg cattaacgct tctgtcgtca acattcaaaa agaaattgac
4021 cgcctcaatg aggtcgctaa aaatttaaat gaatcactca ttgaccttca agaattggga
4081 aaatatgagc aatatattaa atggccttgg tatgtttggc tcggcttcat tgctggacta
4141 attgccatcg tcatggttac aatcttgctt tgttgcatga ctagttgttg tagttgcctc
4201 aagggtgcat gctcttgtgg ttcttgctgc aagtttgatg aggatgactc tgagccagtt
4261 ctcaagggtg tcaaattaca ttacacataa acgaacttat ggatttgttt atgagatttt
4321 ttactcttgg atcaattact gcacagccag taaaaactga caatgcttct cctgcaagta
4381 ctgttcatgc tacagcaacg ataccgctac aagcctcact ccctttcgga tggcttgtta
4441 ttggcgttgc atttcttgct gtttttcaga gcgctaccaa aataattgcg ctcaataaaa
4501 gatggcagct agccctttat aagggcttcc agttcatttg caatttactg ctgctatttg
4561 ttaccatcta ttcacatctt ttgcttgtcg ctgcaggtat ggaggcgcaa tttttgtacc
4621 tctatgcctt gatatacttt ctacaatgca tcaacgcatg tagaattatt atg
```

FIGURE 13

```
   1 aaagaacctt gcccatcagc aacatacgag ggcaattcac catttcaccc tcttgctgac
  61 aataaatttg cactaacttg cactagcaca cactttgctt ttgcttgtgc tgacggtact
 121 cgacatacct atcagctgcg tgcaagatca gtttcaccaa aacttttcat cagacaagag
 181 gaggttcaac aagagctcta ctcgccactt tttctcattg ttgctgctct agtattttta
 241 atactttgct tcaccattaa gagaaagaca gaatgaatga gctcacttta attgacttct
 301 atttgtgctt tttagccttt ctgctattcc ttgttttaat aatgcttatt atattttggt
 361 tttcactcga aatccaggat ctagaagaac cttgtaccaa agtctaaacg aacatgaaac
 421 ttctcattgt tttgacttgt atttctctat gcagttgcat atgcactgta gtacagcgct
 481 gtgcatctaa taaacctcat gtgcttgaag atccttgtaa ggtacaacac taggggtaat
 541 acttatagca ctgcttggct ttgtgctcta ggaaaggttt tacctttca tagatggcac
 601 actatggttc aaacatgcac acctaatgtt actatcaact gtcaagatcc agctggtggt
 661 gcgcttatag ctaggtgttg gtaccttcat gaaggtcacc aaactgctgc atttagagac
 721 gtacttgttg ttttaaataa acgaacaaat taaaatgtct gataatggac cccaatcaaa
 781 ccaacgtagt gccccccgca ttacatttgg tggacccaca gattcaactg acaataacca
 841 gaatggagga cgcaatgggg caaggccaaa acagcgccga ccccaaggtt tacccaataa
 901 tactgcgtct tggttcacag ctctcactca gcatggcaag gaggaactta gattccctcg
 961 aggccagggc gttccaatca acaccaatag tggtccagat gaccaaattg gctactaccg
1021 aagagctacc cgacgagttc gtggtggtga cggcaaaatg aaagagctca gccccagatg
1081 gtacttctat tacctaggaa ctggcccaga agcttcactt ccctacggcg ctaacaaaga
1141 aggcatcgta tgggttgcaa ctgagggagc cttgaataca cccaaagacc acattggcac
1201 ccgcaatcct aataacaatg ctgccaccgt gctacaactt cctcaaggaa caacattgcc
1261 aaaaggcttc tacgcagagg gaagcagagg cggcagtcaa gcctcttctc gctcctcatc
1321 acgtagtcgc ggtaattcaa gaaattcaac tcctggcagc agtaggggaa attctcctgc
1381 tcgaatggct agcggaggtg gtgaaactgc cctcgcgcta ttgctgctag acagattgaa
1441 ccagcttgag agcaaagttt ctggtaaagg ccaacaacaa caaggccaaa ctgtcactaa
1501 gaaatctgct gctgaggcat ctaaaaagcc tcgccaaaaa cgtacagcca caaaacagta
1561 caacgtcact caagcatttg ggagacgtgg tccagaacaa acccaaggaa atttcgggga
1621 ccaagaccta atcagacaag gaactgatta caaacattgg ccgcaaattg cacaatttgc
1681 tccaagtgcc tctgcattct ttggaatgtc acgcattggc atggaagccg caccttcggg
1741 aacatggctg acttatcatg gagccattaa attggatgac aaagatccac aattcaaaga
1801 caacgtcata ctgctgaaca agcacattga cgcatacaaa acattcccac caacagagcc
1861 taaaaaggac aaaaagaaaa agactgatga agctcagcct ttgccgcaga gacaaaagaa
1921 gcagcccact gtgactcttc ttcctgcggc tgacatggat gatttctcca gacaacttca
1981 aaattccatg agtggagctt ctgctgattc aactcaggca taaacactca tgatgaccac
2041 acaaggcaga tgggctatgt aaacgttttc gcaattccgt ttacgataca tagtctactc
2101 ttgtgcagaa tgaattctcg taactaaaca gcacaagtag gtttagttaa ctttaatctc
2161 acatagcaat ctttaatcaa tgtgtaacat tagggaggac ttgaaagagc caccacattt
2221 tcatcgaggc cacgcggagt acgatcgagg gtacagtgaa taatgctagg gagagctgcc
2281 tatatggaag agccctaatg tgta
```

Figure 14A

```
   1 caagtctttc aaaaccattg ttgagtcctg cggtaactat aaagttacca agggaaagcc
  61 cgtaaaaggt gcttggaaca ttggacaaca gagatcagtt ttaacaccac tgtgtggttt
 121 tccctcacag gctgctggtg ttatcagatc aatttttgcg cgcacacttg atgcagcaaa
 181 ccactcaatt cctgatttgc aaagagcagc tgtcaccata cttgatggta tttctgaaca
 241 gtcattacgt cttgtcgacg ccatggttta tacttcagac ctgctcacca acagtgtcat
 301 tattatggca tatgtaactg gtggtcttgt acaacagact tctcagtggt tgtctaatct
 361 tttgggcact actgttgaaa aactcaggcc tatctttgaa tggattgagg cgaaacttag
 421 tgcaggagtt gaatttctca aggatgcttg ggagattctc aaatttctca ttacaggtgt
 481 ttttgacatc gtcaagggtc aaatacaggt tgcttcagat aacatcaagg attgtgtaaa
 541 atgcttcatt gatgttgtta acaaggcact cgaaatgtgc attgatcaag tcactatcgc
 601 tggcgcaaag ttgcgatcac tcaacttagg tgaagtcttc atcgctcaaa gcaagggact
 661 ttaccgtcag tgtatacgtg gcaaggagca gctgcaacta ctcatgcctc ttaaggcacc
 721 aaaagaagta acctttcttg aaggtgattc acatgacaca gtacttacct ctgaggaggt
 781 tgttctcaag aacggtgaac tcgaagcact cgagacgccc gttgatagct tcacaaatgg
 841 agctatcgtt ggcacaccag tctgtgtaaa tggcctcatg ctcttagaga ttaaggacaa
 901 agaacaatac tgcgcattgt ctcctggttt actggctaca aacaatgtct ttcgcttaaa
 961 agggggtgca ccaattaaag gtgtaacctt tggagaagat actgtttggg aagttcaagg
1021 ttacaagaat gtgagaatca catttgagct tgatgaacgt gttgacaaag tgcttaatga
1081 aaagtgctct gtctacactg ttgaatccgg taccgaagtt actgagtttg catgtgttgt
1141 agcagaggct gttgtgaaga ctttacaacc agtttctgat ctccttacca acatgggtat
1201 tgatcttgat gagtggagtg tagctacatt ctacttattt gatgatgctg gtgaagaaaa
1261 cttttcatca cgtatgtatt gttcctttta ccctccagat gaggaagaag aggacgatgc
1321 agagtgtgag gaagaagaaa ttgatgaaac ctgtgaacat gagtacggta cagaggatga
1381 ttatcaaggt ctccctctgg aatttggtgc ctcagctgaa acagttcgag ttgaggaaga
1441 agaagaggaa gactggctgg atgatactac tgagcaatca gagattgagc cagaaccaga
1501 acctacacct gaagaaccag ttaatcagtt tactggttat ttaaaactta ctgacaatgt
1561 tgccattaaa tgtgttgaca ccgttaagga ggcacaaagt gctaatccta tggtgattgt
1621 aaatgctgct aacatacacc tgaaacatgg tggtggtgta gcaggtgcac tcaacaaggc
1681 aaccaatggt gccatgcaaa aggagagtga tgattacatt aagctaaatg gccctcttac
1741 agtaggaggg tcttgtttgc tttctggaca taatcttgct aagaagtgtc tgcatgttgt
1801 tggacctaac ctaaatgcag gtgaggacat ccagcttctt aaggcagcat atgaaaattt
1861 caattcacag gacatcttac ttgcaccatt gttgtcagca ggcatatttg gtgctaaacc
1921 acttcagtct ttacaagtgt gcgtgcagac ggttcgtaca caggtttata ttgcagtcaa
1981 tgacaaagct ctttatgagc aggttgtcat ggattatctt gataacctga agcctagagt
2041 ggaagcacct aaacaagagg agccaccaaa cacagaagat tccaaaactg aggagaaatc
2101 tgtcgtacag aagcctgtcg atgtgaagcc aaaaattaag gcctgcattg atgaggttac
2161 cacaacactg gaagaaacta agtttcttac caataagtta ctcttgtttg ctgatatcaa
2221 tggtaagctt taccatgatt ctcagaacat gcttagaggt gaagatatgt ctttccttga
2281 ggaggatgca ccttacatgg taggtgatgt tatcactagt ggtgatatca cttgtgttgt
2341 aataccctcc aaaaaggctg gtggcactac tgagatgctc tcaagagctt tgaagaaagt
2401 gccagttgat gagtatataa ccacgtaccc tggacaagga tgtgctggtt atacacttga
2461 ggaagctaag actgctctta agaaatgcaa atctgcattt tatgtactac cttcagaagc
2521 acctaatgct aaggaagaga ttctaggaac tgtatcctgg aatttgagag aaatgcttgc
2581 tcatgctgaa gaggcaagaa aattaatgcc tatatgcatg gatgttagag ccataatggc
2641 aaccatccaa cgtaagtata aaggagttaa aattcaagag ggcatcgttg actatggtgt
2701 ccgattcttc ttttatacta gtaaagagcc tgtagcttct attattacga agctgaactc
2761 tctaaatgag ccgcttgtca caatgccaat tggttatgtg acacatggtt ttaatcttga
2821 agaggctgcg cgctgtatgc gttctcttaa agctcctgcc gtagtgtcag tatcatcacc
2881 agatgctgtt actacatata atggatacct cacttcgtca tcaaagacat ctgaggagca
2941 ctttgtagaa acagtttctt tggctggctc ttacagagat tggtcctatt caggacagcg
3001 tacagagtta ggtgttgaat ttcttaagcg tggtgacaaa attgtgtacc acaccctgga
```

Figure 14B

3061 gagccccgtc gagtttcatc ttgacggtga ggttctttca cttgacaaac taaagagtct
3121 cttatccctg cgggaggtta agactataaa agtgttcaca actgtggaca acactaatct
3181 ccacacacag cttgtggata tgtctatgac atatggacag cagtttggtc caacatactt
3241 ggatggtgct gatgttacaa aaattaaacc tcatgtaaat catgagggta agactttctt
3301 tgtactacct agtgatgaca cactacgtag tgaagctttc gagtactacc atactcttga
3361 tgagagtttt cttggtaggt acatgtctgc tttaaaccac acaaagaaat ggaaatttcc
3421 tcaagttggt ggtttaactt caattaaatg ggctgataac aattgttatt tgtctagtgt
3481 tttattagca cttcaacagc ttgaagtcaa attcaatgca ccagcacttc aagagg

FIGURE 15A

1 caaaataatg tgttcatgtc tgaggcaaaa tgttggactg agactgacct tactaaagga
61 cctcacgaat tttgctcaca gcatacaatg ctagttaaac aaggagatga ttacgtgtac
121 ctgccttacc cagatccatc aagaatatta ggcgcaggct gttttgtcga tgatattgtc
181 aaaacagatg gtacacttat gattgaaagg ttcgtgtcac tggctattga tgcttaccca
241 cttacaaaac atcctaatca ggagtatgct gatgtctttc acttgtattt acaatacatt
301 agaaagttac atgatgagct tactggccac atgttggaca tgtattccgt aatgctaact
361 aatgataaca cctcacggta ctgggaacct gagttttatg aggctatgta cacaccacat
421 acagtcttgc aggctgtagg tgcttgtgta ttgtgcaatt cacagacttc acttcgttgc
481 ggtgcctgta ttaggagacc actcctatgt tgcaagtgct gctatgacca tgtcatttca
541 acatcacaca aattagtgtt gtctgttaat ccctatgttt gcaatgcccc aggttgtgat
601 gtcactgatg tgacacaact gtatctagga ggtatgagct attattgcaa gtcacataag
661 cctcccatta gttttccatt atgtgctaat ggtcaggttt ttggtttata caaaaacaca
721 tgtgtaggca gtgacaatgt cactgacttc aatgcgatag caacatgtga ttggactaat
781 gctggcgatt acatacttgc caacacttgt actgagagac tcaagctttt cgcagcagaa
841 acgctcaaag ccactgagga aacatttaag ctgtcatatg gtattgccac tgtacgcgaa
901 gtactctctg acagagaatt gcatctttca tgggaggttg gaaaacctag accaccattg
961 aacagaaact atgtctttac tggttaccgt gtaactaaaa atagtaaagt acagattgga
1021 gagtacacct ttgaaaaagg tgactatggt gatgctgttg tgtacagagg tactacgaca
1081 tacaagttga atgttggtga ttactttgtg ttgacatctc acactgtaat gccacttagt
1141 gcacctactc tagtgccaca agagcactat gtgagaatta ctggcttgta cccaacactc
1201 aacatctcag atgagttttc tagcaatgtt gcaaattatc aaaaggtcgg catgcaaaag
1261 tactctacac tccaaggacc acctggtact ggtaagagtc attttgccat cggacttgct
1321 ctctattacc catctgctcg catagtgtat acggcatgct ctcatgcagc tgttgatgcc
1381 ctatgtgaaa aggcattaaa atatttgccc atagataaat gtagtagaat catacctgcg
1441 cgtgcgcgcg tagagtgttt tgataaattc aaagtgaatt caacactaga acagtatgtt
1501 ttctgcactg taaatgcatt gccagaaaca actgctgaca ttgtagtctt tgatgaaatc
1561 tctatggcta ctaattatga cttgagtgtt gtcaatgcta gacttcgtgc aaaacactac
1621 gtctatattg gcgatcctgc tcaattacca gccccccgca cattgctgac taaaggcaca
1681 ctagaaccag aatattttaa ttcagtgtgc agacttatga aaacaatagg tccagacatg
1741 ttccttggaa cttgtcgccg ttgtcctgct gaaattgttg acactgtgag tgctttagtt
1801 tatgacaata agctaaaagc acacaaggag aagtcagctc aatgcttcaa aatgttctac
1861 aaaggtgtta ttacacatga tgtttcatct gcaatcaaca gacctcaaat aggcgttgta
1921 agagaatttc ttacacgcaa tcctgcttgg agaaaagctg tttttatctc accttataat
1981 tcacagaacg ctgtagcttc aaaaatctta ggattgccta cgcagactgt tgattcatca
2041 cagggttctg aatatgacta tgtcatattc acacaaacta ctgaaacagc acactcttgt
2101 aatgtcaacc gcttcaatgt ggctatcaca agggcaaaaa ttggcatttt gtgcataatg
2161 tctgataggg atctttatga caaactgcaa tttacaagtc tagaaatacc acgtcgcaat
2221 gtggctacat tacaagcaga aaatgtaact ggacttttta aggactgtag taagatcatt
2281 actggtcttc atcctacaca ggcacctaca cacctcagcg ttgatataaa gttcaagact
2341 gaaggattat gtgttgacat accaggcata ccaaaggaca tgacctaccg tagactcatc
2401 tctatgatgg gtttcaaaat gaattaccaa gtcaatggtt accctaatat gtttatcacc
2461 cgcgaagaag ctattcgtca cgttcgtgcg tggattggct ttgatgtaga gggctgtcat
2521 gcaactagag atgctgtggg tactaaccta cctctccagc taggattttc tacaggtgtt
2581 aacttagtag ctgtaccgac tggttatgtt gacactgaaa ataacacaga attcaccaga
2641 gttaatgcaa aacctccacc aggtgaccag tttaaacatc ttataccact catgtataaa
2701 ggcttgccct ggaatgtagt gcgtattaag atagtacaaa tgctcagtga tacactgaaa
2761 ggattgtcag acagagtcgt gttcgtcctt tgggcgcatg gctttgagct tacatcaatg
2821 aagtactttg tcaagattgg acctgaaaga acgtgttgtc tgtgtgacaa acgtgcaact
2881 tgcttttcta cttcatcaga tacttatgcc tgctggaatc attctgtggg ttttgactat
2941 gtctataacc catttatgat tgatgttcag cagtggggct ttacgggtaa ccttcagagt
3001 aaccatgacc aacattgcca ggtacatgga aatgcacatg tggctagttg tgatgctatc

FIGURE 15B

3061 atgactagat gtttagcagt ccatgagtgc tttgttaagc gcgttgattg gtctgttgaa
3121 taccctatta taggagatga actgagggtt aattctgctt gcagaaaagt acaacacatg
3181 gttgtgaagt ctgcattgct tgctgataag tttccagttc ttcatgacat tggaaatcca
3241 aaggctatca agtgtgtgcc tcaggctgaa gtagaatgga agttctacga tgctcagcca
3301 tgtagtgaca aagcttacaa aatagaggaa ctcttctatt cttatgctac acatcacgat
3361 aaattcactg atggtgtttg tttgttttgg aattgtaacg ttgatcgtta cccagccaat
3421 gcaattgtgt gtaggtttga cacaagagtc ttgtcaaact tgaacttacc aggctgtgac
3481 ggtggtagtt tgtatgtgaa taagcatgca ttccacactc cagctttcga taaaagtgca
3541 tttactaatt taaagcaatt gcctttcttt tactattctg atagtccttg tgagtctcat
3601 ggcaaacaag tagtgtcgga tattgattat gttccactca aatctgctac gtgtattaca
3661 cgatgcaatt taggtggtgc tgtttgcaga caccatgcaa atgagtaccg acagtacttg
3721 gatgcatata atatgatgat ttctgctgga tttagcctat ggatttacaa acaatttgat
3781 acttataacc tgtggaatac atttaccagg ttacagagtt tagaaaatgt ggcttataat
3841 gttgttaata aaggacactt tgatggacac gccggcgaag cacctgtttc catcattaat
3901 aatgctgttt acacaaaggt agatggtatt gatgtggaga tctttgaaag taagacaaca
3961 cttcctgtta atgttgcatt tgagctttgg gctaagcgta acattaaacc agtgccagag
4021 attaagatac tcaataattt gggtgttgat atcgctgcta atactgtaat ctgggactac
4081 aaaagagaag ccccagcaca tgtgtctaca ataggtgtct gcacaatgac tgacattgcc
4141 aagaaaccta ctgagagtgc ttgttcttca cttactgtct tgtttgatgg tagagtggaa
4201 ggacaggtag acctttttag aaacgcccgt aatggtgttt taataacaga aggttcagtc
4261 aaaggtctaa caccttcaaa gggaccagca caagctagcg tcaatggagt cacattaatt
4321 ggagaatcag taaaaacaca gtttaactac tttaagaaag tagacggcat tattcaacag
4381 ttgcctgaaa cctactttac tcagagcaga gacttagagg attttaagcc cagatcacaa
4441 atggaaactg actttctcga gctcgctatg gatgaattca tacagcgata taagctcgag
4501 ggctatgcct tcgaacacat cgtttatgga gatttcagtc atggacaact tggcggtctt
4561 catttaatga taggcttagc caagcgctca caagattcac cacttaaatt agaggatttt
4621 atccctatgg acagcacagt gaaaaattac ttcataacag atgcgcaaac aggttcatca
4681 aaatgtgtgc gttctgtgat tgatctttta cttgatgact ttgtcgagat aataaagtca
4741 caagatttgt cagtgatttc aaaagtggtc aaggttacaa ttgactatgc tgaaatttca
4801 ttcatgcttt ggtgtaagga tggacatgtt gaaaccttct acccaaaact acaagcaagt
4861 caagcgtggc aaccaggtgt tgcgatgcct aacttgtaca agatgcaaag aatgcttctt
4921 gaaaagtgtg accttcagaa ttatggtgaa aatgctgtta taccaaaagg aataatgatg
4981 aatgtcgcaa agtatactca actgtgtcaa tacttaaata cacttacttt agctgtaccc
5041 tacaacatga gagttattca ctttggtgct ggctctgata aaggagttgc accaggtaca
5101 gctgtgctca gacaatggtt gccaactggc acactacttg tcgattcaga tcttaatgac
5161 ttcgtctccg acgcagattc tactttaatt ggagactgtg caacagtaca tacggctaat
5221 aaatgggacc ttattattag cgatatgtat gaccctagga cc

FIGURE 16

```
   1 cattacttta tgatgccaac tactttgttt gctggcacac acataactat gactactgta
  61 taccatataa cagtgtcaca gatacaattg tcgttactga aggtgacggc atttcaacac
 121 caaaactcaa agaagactac caaattggtg gttattctga ggataggcac tcaggtgtta
 181 aagactatgt cgttgtacat ggctatttca ccgaagttta ctaccagctt gagtctacac
 241 aaattactac aaacactggt attgaaaatg ctacattctt catctttaac aagcttgtta
 301 aagacccacc gaatgtgcaa atacacacaa tcgacggctc ttcaggagtt gctaatccag
 361 caatggatcc aatttatgat gagccgacga cgactactag cgtgcctttg taagcacaag
 421 aaagtgagta cgaacttatg tactcattcg tttcggaaga aacaggtacg ttaatagtta
 481 atagcgtact tctttttctt gccttcgtgg tattcttgct agtcacacta gccatcctta
 541 ctgcgcttcg attgtgtgcg tactgctgca atattgttaa cgtgagttta gtaaaaccaa
 601 cggtttacgt ctactcgcgt gttaaaaatc tgaactctcc tgaaggagtt cctgatcttc
 661 tggtctaaac gaactaacta ttattattat tctgtttgga actttaacat tgcttatcat
 721 ggcagacaac ggtactatta ccgttgagga gcttaaacaa ctcctggaac aatggaacct
 781 agtaataggt ttcctattcc tagcctggat tatgttacta caatttgcct attctaatcg
 841 gaacaggttt ttgtacataa taaagcttgt tttcctctgg ctcttgtggc cagtaacact
 901 tgcttgtttt gtgcttgctg ctgtctacag aattaattgg gtgactggcg ggattgcgat
 961 tgcaatggct tgtattgtag gcttgatgtg gcttagctac ttcgttgctt ccttcaggct
1021 gtttgctcgt acccgctcaa tgtggtcatt caacccggaa acaaacattc ttcccaatgt
1081 gcctctccgg gggacaattg tgaccagacc gctcatggaa agtgaacttg tcattggtgc
1141 tgtgatcatt cgtggtcact tgcgaatggc cggacactcc ctagggcgct gtgacattaa
1201 ggacctgcca aaagagatca ctgtggctac atcacgaacg ctttcttatt acaaattagg
1261 agcgtcgcag cgtgtaggca ctgattcagg ttttgctgca tacaaccgct accgtattgg
1321 aaactataaa ttaaatacag accacgccgg tagcaacgac aatattgctt tgctagtaca
1381 gtaagtgaca acagatgttt catcttgttg acttccaggt tacaatagca gagatattga
1441 ttatcattat gaggactttc aggattgcta tttggaatct tgacgttata ataagttcaa
1501 tagtgagaca attatttaag cctctaacta agaagaatta ttcggagtta gatgatgaag
1561 aacctatgga gttagattat ccataaaacg aacatgaaaa ttattctctt cctgacattg
1621 attgtattta catcttgcga gctatatcac tatcaggagt gtgttagagg tacgactgta
1681 ctactaaaag aaccttgccc atcagcaaca tacgagggca attcaccatt tcaccctctt
1741 gctgacaata aatttgcact aacttgcact agcacacact ttgcttttgc ttgtgctgac
1801 g
```

FIGURE 17

1 aaagaacctt gcccatcagc aacatacgag ggcaattcac catttcaccc tcttgctgac
61 aataaatttg cactaacttg cactagcaca cactttgctt ttgcttgtgc tgacggtact
121 cgacatacct atcagctgcg tgcaagatca gtttcaccaa aacttttcat cagacaagag
181 gaggttcaac aagagctcta ctcgccactt tttctcattg ttgctgctct agtattttta
241 atactttgct tcaccattaa gagaaagaca gaatgaatga gctcacttta attgacttct
301 atttgtgctt tttagccttt ctgctattcc ttgttttaat aatgcttatt atattttggt
361 tttcactcga aatccaggat ctagaagaac cttgtaccaa agtctaaacg aacatgaaac
421 ttctcattgt tttgacttgt atttctctat gcagttgcat atgcactgta gtacagcgct
481 gtgcatctaa taaacctcat gtgcttgaag atccttgtaa ggtacaacac taggggtaat
541 acttatagca ctgcttggct ttgtgctcta ggaaaggttt tacctttca tagatggcac
601 actatggttc aaacatgcac acctaatgtt actatcaact gtcaagatcc agctggtggt
661 gcgcttatag ctaggtgttg gtaccttcat gaaggtcacc aaactgctgc atttagagac
721 gtacttgttg ttttaaataa acgaacaaat taaaatgtct gataatggac cccaatcaaa
781 ccaacgtagt gccccccgca ttacatttgg tggacccaca gattcaactg acaataacca
841 gaatggagga cgcaatgggg caaggccaaa acagcgccga ccccaaggtt tacccaataa
901 tactgcgtct tggttcacag ctctcactca gcatggcaag gaggaactta gattccctcg
961 aggccagggc gttccaatca acaccaatag tggtccagat gaccaaattg gctactaccg
1021 aagagctacc cgacgagttc gtggtggtga cggcaaaatg aaagagctca gccccagatg
1081 gtacttctat tacctaggaa ctggcccaga agcttcactt ccctacggcg ctaacaaaga
1141 aggcatcgta tgggttgcaa ctgagggagc cttgaataca cccaaagacc acattggcac
1201 ccgcaatcct aataacaatg ctgccaccgt gctacaactt cctcaaggaa caacattgcc
1261 aaaaggcttc tacgcagagg gaagcagagg cggcagtcaa gcctcttctc gctcctcatc
1321 acgtagtcgc ggtaattcaa gaaattcaac tcctggcagc agtaggggaa attctcctgc
1381 tcgaatggct agcggaggtg gtgaaactgc cctcgcgcta ttgctgctag acagattgaa
1441 ccagcttgag agcaaagttt ctggtaaagg ccaacaacaa caaggccaaa ctgtcactaa
1501 gaaatctgct gctgaggcat ctaaaaagcc tcgccaaaaa cgtacagcca caaaacagta
1561 caacgtcact caagcatttg ggagacgtgg tccagaacaa acccaaggaa atttcgggga
1621 ccaagaccta atcagacaag gaactgatta caaacattgg ccgcaaattg cacaatttgc
1681 tccaagtgcc tctgcattct ttggaatgtc acgcattggc atggaagccg caccttcggg
1741 aacatggctg acttatcatg gagccattaa attggatgac aaagatccac aattcaaaga
1801 caacgtcata ctgctgaaca agcacattga cgcatacaaa acattcccac caacagagcc
1861 taaaaaggac aaaaagaaaa agactgatga agctcagcct ttgccgcaga gacaaaagaa
1921 gcagcccact gtgactcttc ttcctgcggc tgacatggat gatttctcca gacaacttca
1981 aaattccatg agtggagctt ctgctgattc aactcaggca taaacactca tgatgaccac
2041 acaaggcaga tgggctatgt aaacgtttc gcaattccgt ttacgataca tagtctactc
2101 ttgtgcagaa tgaattctcg taactaaaca gcacaagtag gtttagttaa ctttaatctc
2161 acatagcaat ctttaatcaa tgtgtaacat tagggaggac ttgaaagagc caccacattt
2221 tcatcgaggc cacgcggagt acgatcgagg gtacagtgaa taatgctagg gagagctgcc
2281 tatatggaag agccctaatg tgta

FIGURE 18A

1 caagtctttc aaaaccattg ttgagtcctg cggtaactat aaagttacca agggaaagcc
61 cgtaaaaggt gcttggaaca ttggacaaca gagatcagtt ttaacaccac tgtgtggttt
121 tccctcacag gctgctggtg ttatcagatc aatttttgcg cgcacacttg atgcagcaaa
181 ccactcaatt cctgatttgc aaagagcagc tgtcaccata cttgatggta tttctgaaca
241 gtcattacgt cttgtcgacg ccatggttta tacttcagac ctgctcacca acagtgtcat
301 tattatggca tatgtaactg gtggtcttgt acaacagact tctcagtggt tgtctaatct
361 tttgggcact actgttgaaa aactcaggcc tatctttgaa tggattgagg cgaaacttag
421 tgcaggagtt gaatttctca aggatgcttg ggagattctc aaatttctca ttacaggtgt
481 ttttgacatc gtcaagggtc aaatacaggt tgcttcagat aacatcaagg attgtgtaaa
541 atgcttcatt gatgttgtta acaaggcact cgaaatgtgc attgatcaag tcactatcgc
601 tggcgcaaag ttgcgatcac tcaacttagg tgaagtcttc atcgctcaaa gcaagggact
661 ttaccgtcag tgtatacgtg gcaaggagca gctgcaacta ctcatgcctc ttaaggcacc
721 aaaagaagta acctttcttg aaggtgattc acatgacaca gtacttacct ctgaggaggt
781 tgttctcaag aacggtgaac tcgaagcact cgagacgccc gttgatagct tcacaaatgg
841 agctatcgtt ggcacaccag tctgtgtaaa tggcctcatg ctcttagaga ttaaggacaa
901 agaacaatac tgcgcattgt ctcctggttt actggctaca aacaatgtct ttcgcttaaa
961 agggggtgca ccaattaaag gtgtaacctt tggagaagat actgtttggg aagttcaagg
1021 ttacaagaat gtgagaatca catttgagct tgatgaacgt gttgacaaag tgcttaatga
1081 aaagtgctct gtctacactg ttgaatccgg taccgaagtt actgagtttg catgtgttgt
1141 agcagaggct gttgtgaaga ctttacaacc agtttctgat ctccttacca acatgggtat
1201 tgatcttgat gagtggagtg tagctacatt ctacttattt gatgatgctg gtgaagaaaa
1261 cttttcatca cgtatgtatt gttcctttta ccctccagat gaggaagaag aggacgatgc
1321 agagtgtgag gaagaagaaa ttgatgaaac ctgtgaacat gagtacggta cagaggatga
1381 ttatcaaggt ctccctctgg aatttggtgc ctcagctgaa acagttcgag ttgaggaaga
1441 agaagaggaa gactggctgg atgatactac tgagcaatca gagattgagc cagaaccaga
1501 acctacacct gaagaaccag ttaatcagtt tactggttat ttaaaactta ctgacaatgt
1561 tgccattaaa tgtgttgaca ccgttaagga ggcacaaagt gctaatccta tggtgattgt
1621 aaatgctgct aacatacacc tgaaacatgg tggtggtgta gcaggtgcac tcaacaaggc
1681 aaccaatggt gccatgcaaa aggagagtga tgattacatt aagctaaatg gccctcttac
1741 agtaggaggg tcttgtttgc tttctggaca taatcttgct aagaagtgtc tgcatgttgt
1801 tggacctaac ctaaatgcag gtgaggacat ccagcttctt aaggcagcat atgaaaattt
1861 caattcacag gacatcttac ttgcaccatt gttgtcagca ggcatatttg gtgctaaacc
1921 acttcagtct ttacaagtgt gcgtgcagac ggttcgtaca caggtttata ttgcagtcaa
1981 tgacaaagct ctttatgagc aggttgtcat ggattatctt gataacctga agcctagagt
2041 ggaagcacct aaacaagagg agccaccaaa cacagaagat tccaaaactg aggagaaatc
2101 tgtcgtacag aagcctgtcg atgtgaagcc aaaaattaag gcctgcattg atgaggttac
2161 cacaacactg gaagaaacta agtttcttac caataagtta ctcttgtttg ctgatatcaa
2221 tggtaagctt taccatgatt ctcagaacat gcttagaggt gaagatatgt ctttccttga
2281 ggaggatgca ccttacatgg taggtgatgt tatcactagt ggtgatatca cttgtgttgt
2341 aataccctcc aaaaaggctg gtggcactac tgagatgctc tcaagagctt tgaagaaagt
2401 gccagttgat gagtatataa ccacgtaccc tggacaagga tgtgctggtt atacacttga
2461 ggaagctaag actgctctta agaaatgcaa atctgcattt tatgtactac cttcagaagc
2521 acctaatgct aaggaagaga ttctaggaac tgtatcctgg aatttgagag aaatgcttgc
2581 tcatgctgaa gaggcaagaa aattaatgcc tatatgcatg gatgttagag ccataatggc

FIGURE 18B

2641 aaccatccaa cgtaagtata aaggagttaa aattcaagag ggcatcgttg actatggtgt
2701 ccgattcttc ttttatacta gtaaagagcc tgtagcttct attattacga agctgaactc
2761 tctaaatgag ccgcttgtca caatgccaat tggttatgtg acacatggtt ttaatcttga
2821 agaggctgcg cgctgtatgc gttctcttaa agctcctgcc gtagtgtcag tatcatcacc
2881 agatgctgtt actacatata atggatacct cacttcgtca tcaaagacat ctgaggagca
2941 ctttgtagaa acagtttctt tggctggctc ttacagagat tggtcctatt caggacagcg
3001 tacagagtta ggtgttgaat ttcttaagcg tggtgacaaa attgtgtacc acaccctgga
3061 gagccccgtc gagtttcatc ttgacggtga ggttctttca cttgacaaac taaagagtct
3121 cttatccctg cgggaggtta agactataaa agtgttcaca actgtggaca acactaatct
3181 ccacacacag cttgtggata tgtctatgac atatggacag cagtttggtc caacatactt
3241 ggatggtgct gatgttacaa aaattaaacc tcatgtaaat catgagggta agactttctt
3301 tgtactacct agtgatgaca cactacgtag tgaagctttc gagtactacc atactcttga
3361 tgagagtttt cttggtaggt acatgtctgc tttaaaccac acaaagaaat ggaaatttcc
3421 tcaagttggt ggtttaactt caattaaatg ggctgataac aattgttatt tgtctagtgt
3481 tttattagca cttcaacagc ttgaagtcaa attcaatgca ccagcacttc aagagg

FIGURE 19

1 cattacttta tgatgccaac tactttgttt gctggcacac acataactat gactactgta
61 taccatataa cagtgtcaca gatacaattg tcgttactga aggtgacggc atttcaacac
121 caaaactcaa agaagactac caaattggtg gttattctga ggataggcac tcaggtgtta
181 aagactatgt cgttgtacat ggctatttca ccgaagttta ctaccagctt gagtctacac
241 aaattactac aaacactggt attgaaaatg ctacattctt catctttaac aagcttgtta
301 aagacccacc gaatgtgcaa atacacacaa tcgacggctc ttcaggagtt gctaatccag
361 caatggatcc aatttatgat gagccgacga cgactactag cgtgcctttg taagcacaag
421 aaagtgagta cgaacttatg tactcattcg tttcggaaga aacaggtacg ttaatagtta
481 atagcgtact tctttttctt gccttcgtgg tattcttgct agtcacacta gccatcctta
541 ctgcgcttcg attgtgtgcg tactgctgca atattgttaa cgtgagttta gtaaaaccaa
601 cggtttacgt ctactcgcgt gttaaaaatc tgaactctcc tgaaggagtt cctgatcttc
661 tggtctaaac gaactaacta ttattattat tctgtttgga actttaacat tgcttatcat
721 ggcagacaac ggtactatta ccgttgagga gcttaaacaa ctcctggaac aatggaacct
781 agtaataggt ttcctattcc tagcctggat tatgttacta caatttgcct attctaatcg
841 gaacaggttt ttgtacataa taaagcttgt tttcctctgg ctcttgtggc cagtaacact
901 tgcttgtttt gtgcttgctg ctgtctacag aattaattgg gtgactggcg ggattgcgat
961 tgcaatggct tgtattgtag gcttgatgtg gcttagctac ttcgttgctt ccttcaggct
1021 gtttgctcgt acccgctcaa tgtggtcatt caacccggaa acaaacattc ttcccaatgt
1081 gcctctccgg gggacaattg tgaccagacc gctcatggaa agtgaacttg tcattggtgc
1141 tgtgatcatt cgtggtcact tgcgaatggc cggacactcc ctagggcgct gtgacattaa
1201 ggacctgcca aaagagatca ctgtggctac atcacgaacg ctttcttatt acaaattagg
1261 agcgtcgcag cgtgtaggca ctgattcagg ttttgctgca tacaaccgct accgtattgg
1321 aaactataaa ttaaatacag accacgccgg tagcaacgac aatattgctt tgctagtaca
1381 gtaagtgaca acagatgttt catcttgttg acttccaggt tacaatagca gagatattga
1441 ttatcattat gaggactttc aggattgcta tttggaatct tgacgttata ataagttcaa
1501 tagtgagaca attatttaag cctctaacta agaagaatta ttcggagtta gatgatgaag
1561 aacctatgga gttagattat ccataaaacg aacatgaaaa ttattctctt cctgacattg
1621 attgtattta catcttgcga gctatatcac tatcaggagt gtgttagagg tacgactgta
1681 ctactaaaag aaccttgccc atcagcaaca tacgagggca attcaccatt tcaccctctt
1741 gctgacaata aatttgcact aacttgcact agcacacact ttgcttttgc ttgtgctgac
1801 g

FIGURE 20

1 tctgtgtagc tgtcgctcgg ctgcatgcct agtgcaccta cgcagtataa acaataataa
61 attttactgt cgttgacaag aaacgagtaa ctcgtccctc ttctgcagac tgcttacggt
121 ttcgtccgtg ttgcagtcga tcatcagcat acctaggttt cgtccgggtg tgaccgaaag
181 gtaagatgga gagccttgtt cttggtgtca acgagaaaac acacgtccaa ctcagtttgc
241 ctgtccttca ggttagagac gtgctagtgc gtggcttcgg ggactctgtg gaagaggccc
301 tatcggaggc acgtgaacac ctcaaaaatg gcacttgtgg tctagtagag ctggaaaaag
361 gcgtactgcc ccagcttgaa cagccctatg tgttcattaa acgttctgat gccttaagca
421 ccaatcacgg ccacaaggtc gttgagctgg ttgcagaaat ggacggcatt cagtacggtc
481 gtagcggtat aacactggga gtactcgtgc cacatgtggg cgaaacccca attgcatacc
541 gcaatgttct tcttcgtaag aacggtaata agggagccgg tggtcatagc tatggcatcg
601 atctaaagtc ttatgactta ggtgacgagc ttggcactga tcccattgaa gattatgaac
661 aaaactggaa cactaagcat ggcagtggtg cactccgtga actcactcgt gagctcaatg
721 gaggtgtagt cactcgctat gtcgacaaca atttctgtgg cccagatggg taccctcttg
781 attgcatcaa agattttcta gcacgcgcgg gcaagtcaat gtgcactctt tccgaacaac
841 ttgattacat cgagtcgaag agaggtgtct actgctgccg tgaccatgag catgaaattg
901 cctggttcac tgagcgctct gataagagct gcgagcacca gacacccttc gaaattaaga
961 gtgccaagaa atttgacact ttcaaagggg aatgcccaaa gtttgtgttt cctcttaact
1021 caaaagtcaa agtcattcaa ccacgtgttg aaaagaaaaa gactgagggt ttcatggggc
1081 gtatacgctc tgtgtaccct gttgcatctc cacaggagtg taacaatatg cacttgtcta
1141 ccttgatgaa atgtaatcat tgcgatgaag tttcatggca gacgtgcgac tttctgaaag
1201 ccacttgtga acattgtggc actgaaaatt tagttattga aggacctact acatgtgggt
1261 acctacctac taatgctgta gtgaaaatgc catgtcctgc ctgtcaagac ccagagattg
1321 gacctgagca tagtgttgca gattatcaca accactcaaa cattgaaact cgactccgca
1381 agggaggtag gactagatgt tttggaggct gtgtgtttgc ctatgttggc tgctataata
1441 agcgtgccta ctgggttcct cgtgctagtg ctgatattgg ctcaggccat actggcatta
1501 ctggtgacaa tgtggagacc ttgaatgagg atctccttga gatactgagt cgtgaacgtg
1561 ttaacattaa cattgttggc gattttcatt tgaatgaaga ggttgccatc attttggcat
1621 ctttctctgc ttctacaagt gcctttattg acactataaa gagtcttgat tacaagtctt
1681 tcaaaaccat tgttgagtcc tgcggt

FIGURE 21 (A)

```
   1 agtgttttat tagcacttca acagcttgaa gtcaaattca atgcaccagc acttcaagag
  61 gcttattata gagcccgtgc tggtgatgct gctaactttt gtgcactcat actcgcttac
 121 agtaataaaa ctgttggcga gcttggtgat gtcagagaaa ctatgaccca tcttctacag
 181 catgctaatt tggaatctgc aaagcgagtt cttaatgtgg tgtgtaaaca ttgtggtcag
 241 aaaactacta ccttaacggg tgtagaagct gtgatgtata tgggtactct atcttatgat
 301 aatcttaaga caggtgtttc cattccatgt gtgtgtggtc gtgatgctac acaatatcta
 361 gtacaacaag agtcttcttt tgttatgatg tctgcaccac ctgctgagta taaattacag
 421 caaggtacat tcttatgtgc gaatgagtac actggtaact atcagtgtgg tcattacact
 481 catataactg ctaaggagac cctctatcgt attgacggag ctcaccttac aaagatgtca
 541 gagtacaaag gaccagtgac tgatgttttc tacaaggaaa catcttacac tacaaccatc
 601 aagcctgtgt cgtataaact cgatggagtt acttacacag agattgaacc aaaattggat
 661 gggtattata aaaaggataa tgcttactat acagagcagc ctatagacct tgtaccaact
 721 caaccattac caaatgcgag ttttgataat ttcaaactca catgttctaa cacaaaattt
 781 gctgatgatt taaatcaaat gacaggcttc acaaagccag cttcacgaga gctatctgtc
 841 acattcttcc cagacttgaa tggcgatgta gtggctattg actatagaca ctattcagcg
 901 agtttcaaga aaggtgctaa attactgcat aagccaattg tttggcacat taaccaggct
 961 acaaccaaga caacgttcaa accaaacact tggtgtttac gttgtctttg gagtacaaag
1021 ccagtagata cttcaaattc atttgaagtt ctggcagtag aagacacaca aggaatggac
1081 aatcttgctt gtgaaagtca acaacccacc tctgaagaag tagtggaaaa tcctaccata
1141 cagaaggaag tcatagagtg tgacgtgaaa actaccgaag ttgtaggcaa tgtcatactt
1201 aaaccatcag atgaaggtgt taaagtaaca caagagttag gtcatgagga tcttatggct
1261 gcttatgtgg aaaacacaag cattaccatt aagaaaccta atgagctttc actagcctta
1321 ggtttaaaaa caattgccac tcatggtatt gctgcaatta atagtgttcc ttggagtaaa
1381 attttggctt atgtcaaacc attcttagga caagcagcaa ttacaacatc aaattgcgct
1441 aagagattag cacaacgtgt gtttaacaat tatatgcctt atgtgtttac attattgttc
1501 caattgtgta cttttactaa aagtaccaat tctagaatta gagcttcact acctacaact
1561 attgctaaaa atagtgttaa gagtgttgct aaattatgtt tggatgccgg cattaattat
1621 gtgaagtcac ccaaattttc taaattgttc acaatcgcta tgtggctatt gttgttaagt
1681 atttgcttag gttctctaat ctgtgtaact gctgcttttg gtgtactctt atctaatttt
1741 ggtgctcctt cttattgtaa tggcgttaga gaattgtatc ttaattcgtc taacgttact
1801 actatggatt tctgtgaagg ttcttttcct tgcagcattt gtttaagtgg attagactcc
1861 cttgattctt atccagctct tgaaaccatt caggtgacga tttcatcgta caagctagac
1921 ttgacaattt taggtctggc cgctgagtgg gttttggcat atatgttgtt cacaaaattc
1981 ttttatttat taggtctttc agctataatg caggtgttct ttggctattt tgctagtcat
2041 ttcatcagca attcttggct catgtggttt atcattagta ttgtacaaat ggcacccgtt
2101 tctgcaatgg ttaggatgta catcttcttt gcttctttct actacatatg gaagagctat
2161 gttcatatca tggatggttg cacctcttcg acttgcatga tgtgctataa gcgcaatcgt
2221 gccacacgcg ttgagtgtac aactattgtt aatggcatga agagatcttt ctatgtctat
2281 gcaaatggag gccgtggctt ctgcaagact cacaattgga attgtctcaa ttgtgacaca
2341 ttttgcactg gtagtacatt cattagtgat gaagttgctc gtgatttgtc actccagttt
2401 aaaagaccaa tcaaccctac tgaccagtca tcgtatattg ttgatagtgt tgctgtgaaa
2461 aatggcgcgc ttcacctcta ctttgacaag gctggtcaaa agacctatga gagacatccg
2521 ctctcccatt ttgtcaattt agacaatttg agagctaaca acactaaagg ttcactgcct
2581 attaatgtca tagtttttga tggcaagtcc aaatgcgacg agtctgcttc taagtctgct
2641 tctgtgtact acagtcagct gatgtgccaa cctattctgt tgcttgacca agctcttgta
2701 tcagacgttg gagatagtac tgaagtttcc gttaagatgt ttgatgctta tgtcgacacc
2761 ttttcagcaa cttttagtgt tcctatggaa aaacttaagg cacttgttgc tacagctcac
2821 agcgagttag caaagggtgt agctttagat ggtgtccttt ctacattcgt gtcagctgcc
2881 cgacaaggtg ttgttgatac cgatgttgac acaaaggatg ttattgaatg tctcaaactt
2941 tcacatcact ctgacttaga agtgacaggt gacagttgta acaatttcat gctcacctat
3001 aataaggttg aaaacatgac gcccagagat cttggcgcat gtattgactg taatgcaagg
```

FIGURE 21 (B)

3061 catatcaatg cccaagtagc aaaaagtcac aatgtttcac tcatctggaa tgtaaaagac
3121 tacatgtctt tatctgaaca gctgcgtaaa caaattcgta gtgctgccaa gaagaacaac
3181 ataccttta gactaacttg tgctacaact agacaggttg tcaatgtcat aactactaaa
3241 atctcactca agggtggtaa gattgttagt acttgtttta aacttatgct taaggccaca
3301 ttattgtgcg ttcttgctgc attggtttgt tatatcgtta tgccagtaca tacattgtca
3361 atccatgatg gttacacaaa tgaaatcatt ggttacaaag ccattcagga tggtgtcact
3421 cgtgacatca tttctactga tgattgtttt gcaaataaac atgctggttt tgacgcatgg
3481 tttagccagc gtggtggttc atacaaaaat gacaaaagct gccctgtagt agctgctatc
3541 attacaagag agattggttt catagtgcct ggcttaccgg gtactgtgct gagagcaatc
3601 aatggtgact tcttgcattt tctacctcgt gtttttagtg ctgttggcaa catttgctac
3661 acaccttcca aactcattga gtatagtgat tttgctacct ctgcttgcgt tcttgctgct
3721 gagtgtacaa tttttaagga tgctatgggc aaacctgtgc catattgtta tgacactaat
3781 ttgctagagg gttctatttc ttatagtgag cttcgtccag acactcgtta tgtgcttatg
3841 gatggttcca tcatacagtt tcctaacact tacctggagg gttctgttag agtagtaaca
3901 acttttgatg ctgagtactg tagacatggt acatgcgaaa ggtcagaagt aggtatttgc
3961 ctatctacca gtggtagatg ggttcttaat aatgagcatt acagagctct atcaggagtt
4021 ttctgtggtg ttgatgcgat gaatctcata gctaacatct ttactcctct tgtgcaacct
4081 gtgggtgctt tagatgtgtc tgcttcagta gtggctggtg gtattattgc catattggtg
4141 acttgtgctg cctactactt tatgaaattc agacgtgttt ttggtgagta caaccatgtt
4201 gttgctgcta atgcactttt gtttttgatg tctttcacta tactctgtct ggtaccagct
4261 tacagctttc tgccgggagt ctactcagtc ttttacttgt acttgacatt ctatttcacc
4321 aatgatgttt cattcttggc tcaccttcaa tggtttgcca tgttttctcc tattgtgcct
4381 ttttggataa cagcaatcta tgtattctgt atttctctga agcactgcca ttggttcttt
4441 aacaactatc ttaggaaaag agtcatgttt aatggagtta catttagtac cttcgaggag
4501 gctgctttgt gtacctttt gctcaacaag gaaatgtacc taaaattgcg tagcgagaca
4561 ctgttgccac ttacacagta taacaggtat cttgctctat ataacaagta caagtatttc
4621 agtggagcct tagatactac cagctatcgt gaagcagctt gctgccactt agcaaaggct
4681 ctaaatgact ttagcaactc aggtgctgat gttctctacc aaccaccaca gacatcaatc
4741 acttctgctg ttctgcagag tggttttagg aaaatggcat tcccgtcagg caaagttgaa
4801 gggtgcatgg tacaagtaac ctgtggaact acaactctta atggattgtg gttggatgac
4861 acagtatact gtccaagaca tgtcatttgc acagcagaag acatgcttaa tcctaactat
4921 gaagatctgc tcattcgcaa atccaaccat agctttcttg ttcaggctgg caatgttcaa
4981 cttcgtgtta ttggccattc tatgcaaaat tgtctgctta ggcttaaagt tgatacttct
5041 aaccctaaga cacccaagta taaatttgtc cgtatccaac ctggtcaaac attttcagtt
5101 ctagcatgct acaatggttc accatctggt gtttatcagt gtgccatgag acctaatcat
5161 accattaaag gttctttcct taatggatca tgtggtagtg ttggttttaa cattgattat
5221 gattgcgtgt ctttctgcta tatgcatcat atggagcttc caacaggagt acacgctggt
5281 accgacttag aaggtaaatt ctatggtcca tttgttgaca gacaaactgc acaggctgca
5341 ggtacagaca caaccataac attaaatgtt ttggcatggc tgtatgctgc tgttatcaat
5401 ggtgataggt ggtttcttaa tagattcacc actactttga atgactttaa ccttgtggca
5461 atgaagtaca actatgaacc tttgacacaa gatcatgttg acatattggg acctctttct
5521 gctcaaacag gaattgccgt cttagatatg tgtgctgctt tgaaagagct gctgcagaat
5581 ggtatgaatg gtcgtactat ccttggtagc actattttag aagatgagtt tacaccattt
5641 gatgttgtta gacaatgctc tggtgttacc ttccaaggta agttcaagaa aattgttaag
5701 ggcactcatc attggatgct tttaactttc ttgacatcac tattgattct tgttcaaagt
5761 acacagtggt cactgttttt ctttgtttac gagaatgctt tcttgccatt tactcttggt
5821 attatggcaa ttgctgcatg tgctatgctg cttgttaagc ataagcacgc attcttgtgc
5881 ttgtttctgt taccttctct tgcaacagtt gcttacttta atatggtcta catgcctgct
5941 agctgggtga tgcgtatcat gacatggctt gaattggctg acactagctt gtctggttat
6001 aggcttaagg attgtgttat gtatgcttca gctttagttt tgcttattct catgacagct
6061 cgcactgttt atgatgatgc tgctagacgt gtttggacac tgatgaatgt cattacactt

FIGURE 21 (C)

6121 gtttacaaag tctactatgg taatgcttta gatcaagcta tttccatgtg ggccttagtt
6181 atttctgtaa cctctaacta ttctggtgtc gttacgacta tcatgttttt agctagagct
6241 atagtgtttg tgtgtgttga gtattatcca ttgttattta ttactggcaa caccttacag
6301 tgtatcatgc ttgtttattg tttcttaggc tattgttgct gctgctactt tggccttttc
6361 tgtttactca accgttactt caggcttact cttggtgttt atgactactt ggtctctaca
6421 caagaattta ggtatatgaa ctcccagggg cttttgcctc ctaagagtag tattgatgct
6481 ttcaagctta acattaagtt gttgggtatt ggaggtaaac catgtatcaa ggttgctact
6541 gtacagtcta aaatgtctga cgtaaagtgc acatctgtgg tactgctctc ggttcttcaa
6601 caacttagag tagagtcatc ttctaaattg tgggcacaat gtgtacaact ccacaatgat
6661 attcttcttg caaaagacac aactgaagct ttcgagaaga tggtttctct tttgtctgtt
6721 ttgctatcca tgcagggtgc tgtagacatt aataggttgt gcgaggaaat gctcgataac
6781 cgtgctactc ttcaggctat tgcttcagaa tttagttctt taccatcata tgccgcttat
6841 gccactgccc aggaggccta tgagcaggct gtagctaatg gtgattctga agtcgttctc
6901 aaaaagttaa agaaatcttt gaatgtggct aaatctgagt ttgaccgtga tgctgccatg
6961 caacgcaagt tggaaaagat ggcagatcag gctatgaccc aaatgtacaa acaggcaaga
7021 tctgaggaca agagggccca agtcgcttct gctatgcaaa caatgctctt cactatgcta
7081 aggaagcttg ataatgatgc acttaacaac attatcaaca atgcgcgtga tggttgtgtt
7141 ccactcaaca tcataccatt gactacagca gccaaactca tggttgttgt ccctgattat
7201 ggtacctaca agaacacttg tgatggtaac acctttacat atgcatctgc actctgggaa
7261 atccagcaag ttgttgatgc ggatagcaag attgttcaac ttagtgaaat taacatggac
7321 aattcaccaa atttggcttg gcctcttatt gttacagctc taagagccaa ctcagctgtt
7381 aaactacaga ataatgaact gagtccagta gcactacgac agatgtcctg tgcggctggt
7441 accacacaaa cagcttgtac tgatgacaat gcacttgcct actataacaa ttcgaaggga
7501 ggtaggtttg tgctggcatt actatcagac caccaagatc tcaaatgggc tagattccct
7561 aagagtgatg gtacaggtac aatttacaca gaactggaac caccttgtag gtttgttaca
7621 gacacaccaa aagggcctaa agtgaaatac ttgtacttca tcaaaggctt aaacaaccta
7681 aatagaggta tggtgctggg cagtttagct gctacagtac gtcttcaggc tggaaatgct
7741 acagaagtac ctgccaattc aactgtgctt tccttctgtg cttttgcagt agaccctgct
7801 aaagcatata aggattacct agcaagtgga ggacaaccaa tcaccaactg tgtgaagatg
7861 ttgtgtacac acactggtac aggacaggca attactgtaa caccagaagc taacatggac
7921 caagagtcct ttggtggtgc ttcatgttgt ctgtattgta gatgccacat tgaccatcca
7981 aatcctaaag gattctgtga cttgaaaggt aagtacgtcc aaatacctac cacttgtgct
8041 aatgacccag tgggttttac acttagaaac acagtctgta ccgtctgcgg aatgtggaaa
8101 ggttatggct gtagttgtga ccaactccgc gaacccttga tgcagtctgc ggatgcatca
8161 acgtttttaa acgggtttgc ggtgtaagtg cagcccgtct tacaccgtgc ggcacaggca
8221 ctagtactga tgtcgtctac agggcttttg atatttacaa cgaaaaagtt gctggttttg
8281 caaagttcct aaaaactaat tgctgtcgct tccaggagaa ggatgaggaa ggcaatttat
8341 tagactctta ctttgtagtt aagaggcata ctatgtctaa ctaccaacat gaagagacta
8401 tttataactt ggttaaagat tgtccagcgg ttgctgtcca tgacttttc aagtttagag
8461 tagatggtga catggtacca catatatcac gtcagcgtct aactaaatac acaatggctg
8521 atttagtcta tgctctacgt cattttgatg agggtaattg tgatacatta aaagaaatac
8581 tcgtcacata caattgctgt gatgatgatt atttcaataa gaaggattgg tatgacttcg
8641 tagagaatcc tgacatctta cgcgtatatg ctaacttagg tgagcgtgta cgccaatcat
8701 tattaaagac tgtacaattc tgcgatgcta tgcgtgatgc aggcattgta ggcgtactga
8761 cattagataa tcaggatctt aatgggaact ggtacgattt cggtgatttc gtacaagtag
8821 caccaggctg cggagttcct attgtggatt catattactc attgctgatg cccatcctca
8881 ctttgactag ggcattggct gctgagtccc atatggatgc tgatctcgca aaaccactta
8941 ttaagtggga tttgctgaaa tatgatttta cggaagagag actttgtctc ttcgaccgtt
9001 attttaaata ttgggaccag acataccatc ccaattgtat taactgtttg gatgataggt
9061 gtatccttca ttgtgcaaac tttaatgtgt tattttctac tgtgtttcca cctacaagtt
9121 ttggaccact agtaagaaaa atatttgtag atggtgttcc ttttgttgtt tcaactggat
9181 accatttteg tgagttagga gtcgtacata atcaggatgt aaacttacat agctcgcgtc

FIGURE 21 (D)

9241 tcagtttcaa ggaactttta gtgtatgctg ctgatccagc tatgcatgca gcttctggca
9301 atttattgct agataaacgc actacatgct tttcagtagc tgcactaaca aacaatgttg
9361 cttttcaaac tgtcaaaccc ggtaatttta ataaagactt ttatgacttt gctgtgtcta
9421 aaggtttctt taaggaagga agttctgttg aactaaaaca cttcttcttt gctcaggatg
9481 gcaacgctgc tatcagtgat tatgactatt atcgttataa tctgccaaca atgtgtgata
9541 tcagacaact cctattcgta gttgaagttg ttgataaata ctttgattgt tacgatggtg
9601 gctgtattaa tgccaaccaa gtaatcgtta acaatctgga taaatcagct ggtttcccat
9661 ttaataaatg gggtaaggct agactttatt atgactcaat gagttatgag gatcaagatg
9721 cacttttcgc gtatactaag cgtaatgtca tccctactat aactcaaatg aatcttaagt
9781 atgccattag tgcaaagaat agagctcgca ccgtagctgg tgtctctatc tgtagtacta
9841 tgacaaatag acagtttcat cagaaattat tgaagtcaat agccgccact agaggagcta
9901 ctgtggtaat tggaacaagc aagttttacg gtggctggca taatatgtta aaaactgttt
9961 acagtgatgt agaaactcca caccttatgg gttgggatta tccaaaatgt gacagagcca
10021 tgcctaacat gcttaggata atggcctctc ttgttcttgc tcgcaaacat aacacttgct
10081 gtaacttatc acaccgtttc tacaggttag ctaacgagtg tgcgcaagta ttaagtgaga
10141 tggtcatgtg tggcggctca ctatatgtta aaccaggtgg aacatcatcc ggtgatgcta
10201 caactgctta tgctaatagt gtctttaaca tttgtcaagc tgttacagcc aatgtaaatg
10261 cacttctttc aactgatggt aataagatag ctgacaagta tgtccgcaat ctacaacaca
10321 ggctctatga gtgtctctat agaaataggg atgttgatca tgaattcgtg gatgagtttt
10381 acgcttacct gcgtaaacat ttctccatga tgattctttc tgatgatgcc gttgtgtgct
10441 ataacagtaa ctatgcggct caaggtttag tagctagcat taagaacttt aaggcagttc
10501 tttattatca aaataatgtg ttcatgtctg aggcaaaatg ttggac

FIGURE 22

1 gtaccttcat gaaggtcacc aaactgctgc atttagagac gtacttgttg ttttaaataa
61 acgaacaaat taaaatgtct gataatggac cccaatcaaa ccaacgtagt gccccccgca
121 ttacatttgg tggacccaca gattcaactg acaataacca gaatggagga cgcaatgggg
181 caaggccaaa acagcgccga ccccaaggtt tacccaataa tactgcgtct tggttcacag
241 ctctcactca gcatggcaag gaggaactta gattccctcg aggccagggc gttccaatca
301 acaccaatag tggtccagat gaccaaattg gctactaccg aagagctacc cgacgagttc
361 gtggtggtga cggcaaaatg aaagagctca gccccagatg gtacttctat tacctaggaa
421 ctggcccaga agcttcactt ccctacggcg ctaacaaaga aggcatcgta tgggttgcaa
481 ctgagggagc cttgaataca cccaaagacc acattggcac ccgcaatcct aataacaatg
541 ctgccaccgt gctacaactt cctcaaggaa caacattgcc aaaaggcttc tacgcagagg
601 gaagcagagg cggcagtcaa gcctcttctc gctcctcatc acgtagtcgc ggtaattcaa
661 gaaattcaac tcctggcagc agtaggggaa attctcctgc tcgaatggct agcggaggtg
721 gtgaaactgc cctcgcgcta ttgctgctag acagattgaa ccagcttgag agcaaagttt
781 ctggtaaagg ccaacaacaa caaggccaaa ctgtcactaa gaaatctgct gctgaggcat
841 ctaaaaagcc tcgccaaaaa cgtactgcca caaaacagta caacgtcact caagcatttg
901 ggagacgtgg tccagaacaa acccaaggaa atttcgggga ccaagaccta atcagacaag
961 gaactgatta caaacattgg ccgcaaattg cacaatttgc tccaagtgcc tctgcattct
1021 ttggaatgtc acgcattggc atggaagtca caccttcggg aacatggctg acttatcatg
1081 gagccattaa attggatgac aaagatccac aattcaaaga caacgtcata ctgctgaaca
1141 agcacattga cgcatacaaa acattcccac caacagagcc taaaaaggac aaaaagaaaa
1201 agactgatga agctcagcct ttgccgcaga gacaaaagaa gcagcccact gtgactcttc
1261 ttcctgcggc tgacatggat gatttctcca gacaacttca aaattccatg agtggagctt
1321 ctgctgattc aactcaggca taaacactca tgatgaccac acaaggcaga tgggctatgt
1381 aaacgttttc gcaattccgt ttacgataca tagtctactc ttgtgcagaa tgaattctcg
1441 taactaaaca gcacaagtag gtttagttaa ctttaatctc acatagcaat ctttaatcaa
1501 tgtgtaacat tagggaggac ttgaaagagc caccacattt tcatcgaggc cacgcggagt
1561 acgatcgagg gtacagtgaa taatgctagg gagagctgcc tatatggaag agccctaatg

FIGURE 23

MSDNGPQSNQRSAPRITFGGPTDSTDNNQNGGRNGARPKQRRPQGLPNNTASWFTALTQHGKEEL
RFPRGQGVPINTNSGPDDQIGYYRRATRRVRGGDGKMKELSPRWYFYYLGTGPEASLPYGANKEG
IVWVATEGALNTPKDHIGTRNPNNNAATVLQLPQGTTLPKGFYAEGSRGGSQASSRSSSRSRGNS
RNSTPGSSRGNSPARMASGGGETALALLLLDRLNQLESKVSGKGQQQQGQTVTKKSAAEASKKPR
QKRTATKQYNVTQAFGRRGPEQTQGNFGDQDLIRQGTDYKHWPQIAQFAPSASAFFGMSRIGMEV
TPSGTWLTYHGAIKLDDKDPQFKDNVILLNKHIDAYKTFPPTEPKKDKKKKTDEAQPLPQRQKKQ
PTVTLLPAADMDDFSRQLQNSMSGASADSTQA

Figure 24

MSDNGPQSNQRSAPRITFGGPTDSTDNNQNGGRNGARPKQRRPQ

GLPNNTASWFTALTQHGKEELRFPRGQGVPINTNSGPDDQIGYYRRATRRVRGGDGKM

KELSPRWYFYYLGTGPEASLPYGANKEGIVWVATEGALNTPKDHIGTRNPNNNAATVL

QLPQGTTLPKGFYAEGSRGGSQASSRSSSRSRGNSRNSTPGSSRGNSPARMASGGGET

ALALLLLDRLNQLESKVSGKGQQQQGQTVTKKSAAEASKKPRQKRTATKQYNVTQAFG

RRGPEQTQGNFGDQDLIRQGTDYKHWPQIAQFAPSASAFFGMSRIGMEVTPSGTWLTY

HGAIKLDDKDPQFKDNVILLNKHIDAYKTFPPTEPKKDKKKKTDEAQPLPQRQKKQPT

VTLLPAADMDDFSRQLQNSMSGASADSTQA

FIGURE 25

(A)

MSDNGPQSNQRSAPRITFGGPTDSTDNNQNGGRNGARPKQRRPQ

GLPNNTASWFTALTQHGKEELRFPRGQGVPINTNSGPDDQIGYYRRATRRVRGGDGKM

KELSPRWYFYYLGTGPEASLPYGANKEGIVWVATEGALNTPKDHIGTRNPNNNAATVL

QLPQGTTLPKGFYAEGSRGGSQASSRSSSRSRGNSRNSTPGSSRGNSPARMASGGGET

ALALLLLDRLNQLESKVSGKGQQQQGQTVTKKSAAEASKKPRQKRTATKQYNVTQAFG

RRGPEQTQGNFGDQDLIRQGTDYKHWPQIAQFAPSASAFFGMSRIGMEAAPSGTWLTY

HGAIKLDDKDPQFKDNVILLNKHIDAYKTFPPTEPKKDKKKKTDEAQPLPQRQKKQPT

VTLLPAADMDDFSRQLQNSMSGASADSTQA

(B)

MSDNGPQSNQRSAPRITFGGPTDSTDNNQNGGRNGARPKQRRPQ

GLPNNTASWFTALTQHGKEELRFPRGQGVPINTNSGPDDQIGYYRRATRRVRGGDGKM

KELSPRWYFYYLGTGPEASLPYGANKEGIVWVATEGALNTPKDHIGTRNPNNNAATVL

QLPQGTTLPKGFYAEGSRGGSQASSRSSSRSRGNSRNSTPGSSRGNSPARMASGGGET

ALALLLLDRLNQLESKVSGKGQQQQGQTVTKKSAAEASKKPRQKRTATKQYNVTQAFG

RRGPEQTQGNFGDQDLIRQGTDYKHWPQIAQFAPSASAFFGMSRIGMEAAPSGTWLTY

HGAIKLDDKDPQFKDNVILLNKHIDAYKTFPPTEPKKDKKKKTDEAQPLPQRQKKQPT

VTLLPAADMDDFSRQLQNSMSGASADSTQA

FIGURE 26

MSDNGPQSNQRSAPRITFGGPTDSTDNNQNGGRNGARPKQRRPQ

GLPNNTASWFTALTQHGKEELRFPRGQGVPINTNSGPDDQIGYYRRATRRVRGGDGKM

KELSPRWYFYYLGTGPEASLPYGANKEGIVWVATEGALNTPKDHIGTRNPNNNAATVL

QLPQGTTLPKGFYAEGSRGGSQASSRSSSRSRGNSRNSTPGSSRGNSPARMASGGGET

ALALLLLDRLNQLESKVSGKGQQQQGQTVTKKSAAEASKKPRQKRTATKQYNVTQAFG

RRGPEQTQGNFGDQDLIRQGTDYKHWPQIAQFAPSASAFFGMSRIGMEVTPSGTWLTY

HGAIKLDDKDPQFKDNVILLNKHIDAYKTFPPTEPKKDKKKKTDEAQPLPQRQKKQPT

VTLLPAADMDDFSRQLQNSMSGASADSTQA

FIGURE 27

MFIFLLFLTLTSGSDLDRCTTFDDVQAPNYTQHTSSMRGVYYPD

EIFRSDTLYLTQDLFLPFYSNVTGFHTINHTFGNPVIPFKDGIYFAATEKSNVVRGWV

FGSTMNNKSQSVIIINNSTNVVIRACNFELCDNPFFAVSKPMGTQTHTMIFDNAFNCT

FEYISDAFSLDVSEKSGNFKHLREFVFKNKDGFLYVYKGYQPIDVVRDLPSGFNTLKP

IFKLPLGINITNFRAILTAFSPAQDIWGTSAAAYFVGYLKPTTFMLKYDENGTITDAV

DCSQNPLAELKCSVKSFEIDKGIYQTSNFRVVPSGDVVRFPNITNLCPFGEVFNATKF

PSVYAWERKKISNCVADYSVLYNSTFFSTFKCYGVSATKLNDLCFSNVYADSFVVKGD

DVRQIAPGQTGVIADYNYKLPDDFMGCVLAWNTRNIDATSTGNYNYKYRYLRHGKLRP

FERDISNVPFSPDGKPCTPPALNCYWPLNDYGFYTTTGIGYQPYRVVVLSFELLNAPA

TVCGPKLSTDLIKNQCVNFNFNGLTGTGVLTPSSKRFQPFQQFGRDVSDFTDSVRDPK

TSEILDISPCSFGGVSVITPGTNASSEVAVLYQDVNCTDVSTAIHADQLTPAWRIYST

GNNVFQTQAGCLIGAEHVDTSYECDIPIGAGICASYHTVSLLRSTSQKSIVAYTMSLG

ADSSIAYSNNTIAIPTNFSISITTEVMPVSMAKTSVDCNMYICGDSTECANLLLQYGS

FCTQLNRALSGIAAEQDRNTREVFAQVKQMYKTPTLKYFGGFNFSQILPDPLKPTKRS

FIEDLLFNKVTLADAGFMKQYGECLGDINARDLICAQKFNGLTVLPPLLTDDMIAAYT

AALVSGTATAGWTFGAGAALQIPFAMQMAYRFNGIGVTQNVLYENQKQIANQFNKAIS

QIQESLTTTSTALGKLQDVVNQNAQALNTLVKQLSSNFGAISSVLNDILSRLDKVEAE

VQIDRLITGRLQSLQTYVTQQLIRAAEIRASANLAATKMSECVLGQSKRVDFCGKGYH

LMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEGKAYFPREGVFVFNGTSWFITQ

RNFFSPQIITTDNTFVSGNCDVVIGIINNTVYDPLQPELDSFKEELDKYFKNHTSPDV

DLGDISGINASVVNIQKEIDRLNEVAKNLNESLIDLQELGKYEQYIKWPWYVWLGFIA

GLIAIVMVTILLCCMTSCCSCLKGACSCGSCCKFDEDDSEPVLKGVKLHYT

FIGURE 28

MFIFLLFLTLTSGSDLDRCTTFDDVQAPNYTQHTSSMRGVYYPD

EIFRSDTLYLTQDLFLPFYSNVTGFHTINHTFGNPVIPFKDGIYFAATEKSNVVRGWV

FGSTMNNKSQSVIIINNSTNVVIRACNFELCDNPFFAVSKPMGTQTHTMIFDNAFNCT

FEYISDAFSLDVSEKSGNFKHLREFVFKNKDGFLYVYKGYQPIDVVRDLPSGFNTLKP

IFKLPLGINITNFRAILTAFSPAQDIWGTSAAAYFVGYLKPTTFMLKYDENGTITDAV

DCSQNPLAELKCSVKSFEIDKGIYQTSNFRVVPSGDVVRFPNITNLCPFGEVFNATKF

PSVYAWERKKISNCVADYSVLYNSTFFSTFKCYGVSATKLNDLCFSNVYADSFVVKGD

DVRQIAPGQTGVIADYNYKLPDDFMGCVLAWNTRNIDATSTGNYNYKYRYLRHGKLRP

FERDISNVPFSPDGKPCTPPALNCYWPLNDYGFYTTTGIGYQPYRVVVLSFELLNAPA

TVCGPKLSTDLIKNQCVNFNFNGLTGTGVLTPSSKRFQPFQQFGRDVSDFTDSVRDPK

TSEILDISPCAFGGVSVITPGTNASSEVAVLYQDVNCTDVSTAIHADQLTPAWRIYST

GNNVFQTQAGCLIGAEHVDTSYECDIPIGAGICASYHTVSLLRSTSQKSIVAYTMSLG

ADSSIAYSNNTIAIPTNFSISITTEVMPVSMAKTSVDCNMYICGDSTECANLLLQYGS

FCTQLNRALSGIAAEQDRNTREVFAQVKQMYKTPTLKYFGGFNFSQILPDPLKPTKRS

FIEDLLFNKVTLADAGFMKQYGECLGDINARDLICAQKFNGLTVLPPLLTDDMIAAYT

AALVSGTATAGWTFGAGAALQIPFAMQMAYRFNGIGVTQNVLYENQKQIANQFNKAIS

QIQESLTTTSTALGKLQDVVNQNAQALNTLVKQLSSNFGAISSVLNDILSRLDKVEAE

VQIDRLITGRLQSLQTYVTQQLIRAAEIRASANLAATKMSECVLGQSKRVDFCGKGYH

LMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEGKAYFPREGVFVFNGTSWFITQ

RNFFSPQIITTDNTFVSGNCDVVIGIINNTVYDPLQPELDSFKEELDKYFKNHTSPDV

DLGDISGINASVVNIQKEIDRLNEVAKNLNESLIDLQELGKYEQYIKWPWYVWLGFIA

GLIAIVMVTILLCCMTSCCSCLKGACSCGSCCKFDEDDSEPVLKGVKLHYT

FIGURE 29

MFIFLLFLTLTSGSDLDRCTTFDDVQAPNYTQHTSSMRGVYYPD

EIFRSDTLYLTQDLFLPFYSNVTGFHTINHTFGNPVIPFKDGIYFAATEKSNVVRGWV

FGSTMNNKSQSVIIISNSTNVVIRACNFELCDNPFFAVSKPMGTQTHTMIFDNAFNCT

FEYISDAFSLDVSEKSGNFKHLREFVFKNKDGSLYVYKGYQPIDVVRDLPSGFNTLKP

IFKLPLGINITNFRAILTAFSPAQDIWGTSAAAYFVGYLKPTTFMLKYDENGTITDAV

DCSQNPLAELKCSVKSFEIDKGIYQTSNFRVVPSGDVVRFPNITNLCPFGEVFNATKF

PSVYAWERKKISNCVADYSVLYNSTFFSTFKCYGVSATKLNDLCFSNVYADSFVVKGD

DVRQIAPGQTGVIADYNYKLPDDFMGCVLAWNTGNIDATSTGNYDYKYRYLRHGKLRP

FERDISNVPFSPDGKPCTPPALNCYWPLNDYGFYTTTGIGYQPYRVVVLSFELLNAPA

TVCGPKLSTDLIKNQCVNFNFNGLTGTGVLTPSSKRFQPFQQFGRDVSDFTDSVRDPK

TSEILDISPCSFGGVSVITPGTNASSEVAVLYQDVNCTDVSTAIHADQLTPAWRIYST

GNNVFQTQAGCLIGAEHVDTSYECDIPIGAGICASYHTVSLLRSTSQKSIVAYTMSLG

ADSSIAYSNNTIAIPTNFSISITTEVMPVSMAKTSVDCNMYICGDSTECANLLLQYGS

FCTQLNRALSGIAAEQDRNTREVFAQVKQMYKTPTLKYFGGFNFSQILPDPLKPTKRS

FIEDLPFNKVTLADAGFMKQYGECLGDINARDLICAQKFNGLTVLPPLLTDDMIAAYT

AALVSGTATAGWTFGAGAALQIPFAMQMAYRFNGIGVTQNVLYENQKQIANQFNKAIS

QIQESLTTTSTALGKLQDVVNQNAQALNTLVKQLSSNFGAISSVLNDILSRLDKVEAE

VQIDRLITGRLQSLQTYVTQQLIRAAGIRASANLAATKMSECVLGQSKRVDFCGKGYH

LMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEGKAYFPREGVFVFNGTSWFITQ

RNFFSPQIITTDNTFVSGNCDVVIGIINNTVYDPLQPELDSFKEELDKYFKNHTSPDV

DLGDISGINASVVNIQKEIDRLNEVAKNLNESLIDLQELGKYEQYIKWPWYVWLGFIA

GLIAIVMVTILLCCMTSCCSCLKGACSCGSCCKFDEDDSEPVLKGVKLHYT

FIGURE 30

(A)

MADNGTITVEELKQLLEQWNLVIGFLFLAWIMLLQFAYSNRNRF

LYIIKLVFLWLLWPVTLACFVLAAVYRINWVTGGIAIAMACIVGLMWLSYFVASFRLF

ARTRSMWSFNPETNILLNVPLRGTIVTRPLMESELVIGAVIIRGHLRMAGHPLGRCDI

KDLPKEITVATSRTLSYYKLGASQRVGTDSGFAAYNRYRIGNYKLNTDHAGSNDNIAL

LVQ

(B)

MADNGTITVEELKQLLEQWNLVIGFLFLAWIMLLQFAYSNRNRF

LYIIKLVFLWLLWPVTLACFVLAAVYRINWVTGGIAIAMACIVGLMWLSYFVASFRLF

ARTRSMWSFNPETNILLNVPLRGTIVTRPLMESELVIGAVIIRGHLRMAGHSLGRCDI

KDLPKEITVATSRTLSYYKLGASQRVGTDSGFAAYNRYRIGNYKLNTDHAGSNDNIAL

LVQ

(C)

MADNGTITVEELKQLLEQWNLVIGFLFLAWIMLLQFAYSNRNRF

LYIIKLVFLWLLWPVTLACFVLAAVYRINWVTGGIAIAMACIVGLMWLSYFVASFRLF

ARTRSMWSFNPETNILPNVPLRGTIVTRPLMESELVIGAVIIRGHLRMAGHSLGRCDI

KDLPKEITVATSRTLSYYKLGASQRVGTDSGFAAYNRYRIGNYKLNTDHAGSNDNIAL

LVQ

(D)

MADNGTITVEELKQLLEQWNLVIGFLFLAWIMLLQFAYSNRNRF

LYIIKLVFLWLLWPVTLACFVLAAVYRINWVTGGIAIAMACIVGLMWLSYFVASFRLF

ARTRSMWSFNPETNILPNVPLRGTIVTRPLMESELVIGAVIIRGHLRMAGHSLGRCDI

KDLPKEITVATSRTLSYYKLGASQRVGTDSGFAAYNRYRIGNYKLNTDHAGSNDNIAL

LVQ

FIGURE 31

(A)
MYSFVSEETGTLIVNSVLLFLAFVVFLLVTLAILTALRLCAYCC
NIVNVSLVKPTVYVYSRVKNLNSSEGVPDLLV

(B)
MYSFVSEETGTLIVNSVLLFLAFVVFLLVTLAILTALRLCAYCC
NIVNVSLVKPTVYVYSRVKNLNSSEGVPDLLV

(C)
MYSFVSEETGTLIVNSVLLFLAFVVFLLVTLAILTALRLCAYCC
NIVNVSLVKPTVYVYSRVKNLNSPEGVPDLLV

(D)
MYSFVSEETGTLIVNSVLLFLAFVVFLLVTLAILTALRLCAYCC
NIVNVSLVKPTVYVYSRVKNLNSPEGVPDLLV

(E)
MYSFVSEETGTLIVNSVLLFLAFVVFLLVTLAILTALRLCAYCC
NIVNVSLVKPTVYVYSRVKNLNSSEGVPDLLV

FIGURE 32(A)

MESLVLGVNEKTHVQLSLPVLQVRDVLVRGFGDSVEEALSEARE

HLKNGTCGLVELEKGVLPQLEQPYVFIKRSDALSTNHGHKVVELVAEMDGIQYGRSGI

TLGVLVPHVGETPIAYRNVLLRKNGNKGAGGHSYGIDLKSYDLGDELGTDPIEDYEQN

WNTKHGSGALRELTRELNGGAVTRYVDNNFCGPDGYPLDCIKDFLARAGKSMCTLSEQ

LDYIESKRGVYCCRDHEHEIAWFTERSDKSYEHQTPFEIKSAKKFDTFKGECPKFVFP

LNSKVKVIQPRVEKKKTEGFMGRIRSVYPVASPQECNNMHLSTLMKCNHCDEVSWQTC

DFLKATCEHCGTENLVIEGPTTCGYLPTNAVVKMPCPACQDPEIGPEHSVADYHNHSN

IETRLRKGGRTRCFGGCVFAYVGCYNKRAYWVPRASADIGSGHTGITGDNVETLNEDL

LEILSRERVNININVGDFHLNEEVAIILASFSASTSAFIDTIKSLDYKSFKTIVESCGN

YKVTKGKPVKGAWNIGQQRSVLTPLCGFPSQAAGVIRSIFARTLDAANHSIPDLQRAA

VTILDGISEQSLRLVDAMVYTSDLLTNSVIIMAYVTGGLVQQTSQWLSNLLGTTVEKL

RPIFEWIEAKLSAGVEFLKDAWEILKFLITGVFDIVKGQIQVASDNIKDCVKCFIDVV

NKALEMCIDQVTIAGAKLRSLNLGEVFIAQSKGLYRQCIRGKEQLQLLMPLKAPKEVT

FLEGDSHDTVLTSEEVVLKNGELEALETPVDSFTNGAIVGTPVCVNGLMLLEIKDKEQ

YCALSPGLLATNNVFRLKGGAPIKGVTFGEDTVWEVQGYKNVRITFELDERVDKVLNE

KCSVYTVESGTEVTEFACVVAEAVVKTLQPVSDLLTNMGIDLDEWSVATFYLFDDAGE

ENFSSRMYCSFYPPDEEEEDDAECEEEEIDETCEHEYGTEDDYQGLPLEFGASAETVR

VEEEEEEDWLDDTTEQSEIEPEPEPTPEEPVNQFTGYLKLTDNVAIKCVDIVKEAQSA

NPMVIVNAANIHLKHGGGVAGALNKATNGAMQKESDDYIKLNGPLTVGGSCLLSGHNL

AKKCLHVVGPNLNAGEDIQLLKAAYENFNSQDILLAPLLSAGIFGAKPLQSLQVCVQT

VRTQVYIAVNDKALYEQVVMDYLDNLKPRVEAPKQEEPPNTEDSKTEEKSVVQKPVDV

KPKIKACIDEVTTTLEETKFLTNKLLLFADINGKLYHDSQNMLRGEDMSFLEKDAPYM

VGDVITSGDITCVVIPSKKAGGTTEMLSRALKKVPVDEYITTYPGQGCAGYTLEEAKT

ALKKCKSAFYVLPSEAPNAKEEILGTVSWNLREMLAHAEETRKLMPICMDVRAIMATI

QRKYKGIKIQEGIVDYGVRFFFYTSKEPVASIITKLNSLNEPLVTMPIGYVTHGFNLE

EAARCMRSLKAPAVVSVSSPDAVTTYNGYLTSSSKTSEEHFVETVSLAGSYRDWSYSG

FIGURE 32(B)

QRTELGVEFLKRGDKIVYHTLESPVEFHLDGEVLSLDKLKSLLSLREVKTIKVFTTVD

NTNLHTQLVDMSMTYGQQFGPTYLDGADVTKIKPHVNHEGKTFFVLPSDDTLRSEAFE

YYHTLDESFLGRYMSALNHTKKWKFPQVGGLTSIKWADNNCYLSSVLLALQQLEVKFN

APALQEAYYRARAGDAANFCALILAYSNKTVGELGDVRETMTHLLQHANLESAKRVLN

VVCKHCGQKTTTLTGVEAVMYMGTLSYDNLKTGVSIPCVCGRDATQYLVQQESSFVMM

SAPPAEYKLQQGTFLCANEYTGNYQCGHYTHITAKETLYRIDGAHLTKMSEYKGPVTD

VFYKETSYTTTIKPVSYKLDGVTYTEIEPKLDGYYKKDNAYYTEQPIDLVPTQPLPNA

SFDNFKLTCSNTKFADDLNQMTGFTKPASRELSVTFFPDLNGDVVAIDYRHYSASFKK

GAKLLHKPIVWHINQATTKTTFKPNTWCLRCLWSTKPVDTSNSFEVLAVEDTQGMDNL

ACESQQPTSEEVVENPTIQKEVIECDVKTTEVVGNVILKPSDEGVKVTQELGHEDLMA

AYVENTSITIKKPNELSLALGLKTIATHGIAAINSVPWSKILAYVKPFLGQAAITTSN

CAKRLAQRVFNNYMPYVFTLLFQLCTFTKSTNSRIRASLPTTIAKNSVKSVAKLCLDA

GINYVKSPKFSKLFTIAMWLLLLSICLGSLICVTAAFGVLLSNFGAPSYCNGVRELYL

NSSNVTTMDFCEGSFPCSICLSGLDSLDSYPALETIQVTISSYKLDLTILGLAAEWVL

AYMLFTKFFYLLGLSAIMQVFFGYFASHFISNSWLMWFIISIVQMAPVSAMVRMYIFF

ASFYYIWKSYVHIMDGCTSSTCMMCYKRNRATRVECTTIVNGMKRSFYVYANGGRGFC

KTHNWNCLNCDTFCTGSTFISDEVARDLSLQFKRPINPTDQSSYIVDSVAVKNGALHL

YFDKAGQKTYERHPLSHFVNLDNLRANNTKGSLPINVIVFDGKSKCDESASKSASVYY

SQLMCQPILLLDQVLVSDVGDSTEVSVKMFDAYVDTFSATFSVPMEKLKALVATAHSE

LAKGVALDGVLSTFVSAARQGVVDTDVDTKDVIECLKLSHHSDLEVTGDSCNNFMLTY

NKVENMTPRDLGACIDCNARHINAQVAKSHNVSLIWNVKDYMSLSEQLRKQIRSAAKK

NNIPFRLTCATTRQVVNVITTKISLKGGKIVSTCFKLMLKATLLCVLAALVCYIVMPV

HTLSIHDGYTNEIIGYKAIQDGVTRDIISTDDCFANKHAGFDAWFSQRGGSYKNDKSC

PVVAAIITREIGFIVPGLPGTVLRAINGDFLHFLPRVFSAVGNICYTPSKLIEYSDFA

TSACVLAAECTIFKDAMGKPVPYCYDTNLLEGSISYSELRPDTRYVLMDGSIIQFPNT

YLEGSVRVVTTFDAEYCRHGTCERSEVGICLSTSGRWVLNNEHYRALSGVFCGVDAMN

FIGURE 32(C)

LIANIFTPLVQPVGALDVSASVVAGGIIAILVTCAAYYFMKFRRVFGEYNHVVAANAL

LFLMSFTILCLVPAYSFLPGVYSVFYLYLTFYFTNDVSFLAHLQWFAMFSPIVPFWIT

AIYVFCISLKHCHWFFNNYLRKRVMFNGVTFSTFEEAALCTFLLNKEMYLKLRSETLL

PLTQYNRYLALYNKYKYFSGALDTTSYREAACCHLAKALNDFSNSGADVLYQPPQTSI

TSAVLQSGFRKMAFPSGKVEGCMVQVTCGTTTLNGLWLDDTVYCPRHVICTAEDMLNP

NYEDLLIRKSNHSFLVQAGNVQLRVIGHSMQNCLLRLKVDTSNPKTPKYKFVRIQPGQ

TFSVLACYNGSPSGVYQCAMRPNHTIKGSFLNGSCGSVGFNIDYDCVSFCYMHHMELP

TGVHAGTDLEGKFYGPFVDRQTAQAAGTDTTITLNVLAWLYAAVINGDRWFLNRFTTT

LNDFNLVAMKYNYEPLTQDHVDILGPLSAQTGIAVLDMCAALKELLQNGMNGRTILGS

TILEDEFTPFDVVRQCSGVTFQGKFKKIVKGTHHWMLLTFLTSLLILVQSTQWSLFFF

VYENAFLPFTLGIMAIAACAMLLVKHKHAFLCLFLLPSLATVAYFNMVYMPASWVMRI

MTWLELADTSLSGYRLKDCVMYASALVLLILMTARTVYDDAARRVWTLMNVITLVYKV

YYGNALDQAISMWALVISVTSNYSGVVTTIMFLARAIVFVCVEYYPLLFITGNTLQCI

MLVYCFLGYCCCCYFGLFCLLNRYFRLTLGVYDYLVSTQEFRYMNSQGLLPPKSSIDA

FKLNIKLLGIGGKPCIKVATVQSKMSDVKCTSVVLLSVLQQLRVESSSKLWAQCVQLH

NDILLAKDTTEAFEKMVSLLSVLLSMQGAVDINRLCEEMLDNRATLQAIASEFSSLPS

YAAYATAQEAYEQAVANGDSEVVLKKLKKSLNVAKSEFDRDAAMQRKLEKMADQAMTQ

MYKQARSEDKRAKVTSAMQTMLFTMLRKLDNDALNNIINNARDGCVPLNIIPLTTAAK

LMVVVPDYGTYKNTCDGNTFTYASALWEIQQVVDADSKIVQLSEINMDNSPNLAWPLI

VTALRANSAVKLQNNELSPVALRQMSCAAGTTQTACTDDNALAYYNNSKGGRFVLALL

SDHQDLKWARFPKSDGTGTIYTELEPPCRFVTDTPKGPKVKYLYFIKGLNNLNRGMVL

GSLAATVRLQAGNATEVPANSTVLSFCAFAVDPAKAYKDYLASGGQPITNCVKMLCTH

TGTGQAITVTPEANMDQESFGGASCCLYCRCHIDHPNPKGFCDLKGKYVQIPTTCAND

PVGFTLRNTVCTVCGMWKGYGCSCDQLREPLMQSADASTFLNGFAV

FIGURE 33 (A)

MESLVLGVNEKTHVQLSLPVLQVRDVLVRGFGDSVEEALSEARE

HLKNGTCGLVELEKGVLPQLEQPYVFIKRSDALSTNHGHKVVELVAEMDGIQYGRSGI

TLGVLVPHVGETPIAYRNVLLRKNGNKGAGGHSYGIDLKSYDLGDELGTDPIEDYEQN

WNTKHGSGALRELTRELNGGAVTRYVDNNFCGPDGYPLDCIKDFLARAGKSMCTLSEQ

LDYIESKRGVYCCRDHEHEIAWFTERSDKSYEHQTPFEIKSAKKFDTFKGECPKFVFP

LNSKVKVIQPRVEKKKTEGFMGRIRSVYPVASPQECNNMHLSTLMKCNHCDEVSWQTC

DFLKATCEHCGTENLVIEGPTTCGYLPTNAVVKMPCPACQDPEIGPEHSVADYHNHSN

IETRLRKGGRTRCFGGCVFAYVGCYNKRAYWVPRASADIGSGHTGITGDNVETLNEDL

LEILSRERVNINIVGDFHLNEEVAIILASFSASTSAFIDTIKSLDYKSFKTIVESCGN

YKVTKGKPVKGAWNIGQQRSVLTPLCGFPSQAAGVIRSIFARTLDAANHSIPDLQRAA

VTILDGISEQSLRLVDAMVYTSDLLTNSVIIMAYVTGGLVQQTSQWLSNLLGTTVEKL

RPIFEWIEAKLSAGVEFLKDAWEILKFLITGVFDIVKGQIQVASDNIKDCVKCFIDVV

NKALEMCIDQVTIAGAKLRSLNLGEVFIAQSKGLYRQCIRGKEQLQLLMPLKAPKEVT

FLEGDSHDTVLTSEEVVLKNGELEALETPVDSFTNGAIVGTPVCVNGLMLLEIKDKEQ

YCALSPGLLATNNVFRLKGGAPIKGVTFGEDTVWEVQGYKNVRITFELDERVDKVLNE

KCSVYTVESGTEVTEFACVVAEAVVKTLQPVSDLLTNMGIDLDEWSVATFYLFDDAGE

ENFSSRMYCSFYPPDEEEEDDAECEEEEIDETCEHEYGTEDDYQGLPLEFGASAETVR

VEEEEEEDWLDDTTEQSEIEPEPEPTPEEPVNQFTGYLKLTDNVAIKCVDIVKEAQSA

NPMVIVNAANIHLKHGGGVAGALNKATNGAMQKESDDYIKLNGPLTVGGSCLLSGHNL

AKKCLHVVGPNLNAGEDIQLLKAAYENFNSQDILLAPLLSAGIFGAKPLQSLQVCVQT

VRTQVYIAVNDKALYEQVVMDYLDNLKPRVEAPKQEEPPNTEDSKTEEKSVVQKPVDV

KPKIKACIDEVTTTLEETKFLTNKLLLFADINGKLYHDSQNMLRGEDMSFLEKDAPYM

VGDVITSGDITCVVIPSKKAGGTTEMLSRALKKVPVDEYITTYPGQGCAGYTLEEAKT

ALKKCKSAFYVLPSEAPNAKEEILGTVSWNLREMLAHAEETRKLMPICMDVRAIMATI

QRKYKGIKIQEGIVDYGVRFFFYTSKEPVASIITKLNSLNEPLVTMPIGYVTHGFNLE

EAARCMRSLKAPAVVSVSSPDAVTTYNGYLTSSSKTSEEHFVETVSLAGSYRDWSYSG

FIGURE 33 (B)

QRTELGVEFLKRGDKIVYHTLESPVEFHLDGEVLSLDKLKSLLSLREVKTIKVFTTVD

NTNLHTQLVDMSMTYGQQFGPTYLDGADVTKIKPHVNHEGKTFFVLPSDDTLRSEAFE

YYHTLDESFLGRYMSALNHTKKWKFPQVGGLTSIKWADNNCYLSSVLLALQQLEVKFN

APALQEAYYRARAGDAANFCALILAYSNKTVGELGDVRETMTHLLQHANLESAKRVLN

VVCKHCGQKTTTLTGVEAVMYMGTLSYDNLKTGVSIPCVCGRDATQYLVQQESSFVMM

SAPPAEYKLQQGTFLCANEYTGNYQCGHYTHITAKETLYRIDGAHLTKMSEYKGPVTD

VFYKETSYTTTIKPVSYKLDGVTYTEIEPKLDGYYKKDNAYYTEQPIDLVPTQPLPNA

SFDNFKLTCSNTKFADDLNQMTGFTKPASRELSVTFFPDLNGDVVAIDYRHYSASFKK

GAKLLHKPIVWHINQATTKTTFKPNTWCLRCLWSTKPVDTSNSFEVLAVEDTQGMDNL

ACESQQPTSEEVVENPTIQKEVIECDVKTTEVVGNVILKPSDEGVKVTQELGHEDLMA

AYVENTSITIKKPNELSLALGLKTIATHGIAAINSVPWSKILAYVKPFLGQAAITTSN

CAKRLAQRVFNNYMPYVFTLLFQLCTFTKSTNSRIRASLPTTIAKNSVKSVAKLCLDA

GINYVKSPKFSKLFTIAMWLLLLSICLGSLICVTAAFGVLLSNFGAPSYCNGVRELYL

NSSNVTTMDFCEGSFPCSICLSGLDSLDSYPALETIQVTISSYKLDLTILGLAAEWVL

AYMLFTKFFYLLGLSAIMQVFFGYFASHFISNSWLMWFIISIVQMAPVSAMVRMYIFF

ASFYYIWKSYVHIMDGCTSSTCMMCYKRNRATRVECTTIVNGMKRSFYVYANGGRGFC

KTHNWNCLNCDTFCTGSTFISDEVARDLSLQFKRPINPTDQSSYIVDSVAVKNGALHL

YFDKAGQKTYERHPLSHFVNLDNLRANNTKGSLPINVIVFDGKSKCDESASKSASVYY

SQLMCQPILLLDQALVSDVGDSTEVSVKMFDAYVDTFSATFSVPMEKLKALVATAHSE

LAKGVALDGVLSTFVSAARQGVVDTDVDTKDVIECLKLSHHSDLEVTGDSCNNFMLTY

NKVENMTPRDLGACIDCNARHINAQVAKSHNVSLIWNVKDYMSLSEQLRKQIRSAAKK

NNIPFRLTCATTRQVVNVITTKISLKGGKIVSTCFKLMLKATLLCVLAALVCYIVMPV

HTLSIHDGYTNEIIGYKAIQDGVTRDIISTDDCFANKHAGFDAWFSQRGGSYKNDKSC

PVVAAIITREIGFIVPGLPGTVLRAINGDFLHFLPRVFSAVGNICYTPSKLIEYSDFA

TSACVLAAECTIFKDAMGKPVPYCYDTNLLEGSISYSELRPDTRYVLMDGSIIQFPNT

YLEGSVRVVTTFDAEYCRHGTCERSEVGICLSTSGRWVLNNEHYRALSGVFCGVDAMN

FIGURE 33 (C)

LIANIFTPLVQPVGALDVSASVVAGGIIAILVTCAAYYFMKFRRVFGEYNHVVAANAL

LFLMSFTILCLVPAYSFLPGVYSVFYLYLTFYFTNDVSFLAHLQWFAMFSPIVPFWIT

AIYVFCISLKHCHWFFNNYLRKRVMFNGVTFSTFEEAALCTFLLNKEMYLKLRSETLL

PLTQYNRYLALYNKYKYFSGALDTTSYREAACCHLAKALNDFSNSGADVLYQPPQTSI

TSAVLQSGFRKMAFPSGKVEGCMVQVTCGTTTLNGLWLDDTVYCPRHVICTAEDMLNP

NYEDLLIRKSNHSFLVQAGNVQLRVIGHSMQNCLLRLKVDTSNPKTPKYKFVRIQPGQ

TFSVLACYNGSPSGVYQCAMRPNHTIKGSFLNGSCGSVGFNIDYDCVSFCYMHHMELP

TGVHAGTDLEGKFYGPFVDRQTAQAAGTDTTITLNVLAWLYAAVINGDRWFLNRFTTT

LNDFNLVAMKYNYEPLTQDHVDILGPLSAQTGIAVLDMCAALKELLQNGMNGRTILGS

TILEDEFTPFDVVRQCSGVTFQGKFKKIVKGTHHWMLLTFLTSLLILVQSTQWSLFFF

VYENAFLPFTLGIMAIAACAMLLVKHKHAFLCLFLLPSLATVAYFNMVYMPASWVMRI

MTWLELADTSLSGYRLKDCVMYASALVLLILMTARTVYDDAARRVWTLMNVITLVYKV

YYGNALDQAISMWALVISVTSNYSGVVTTIMFLARAIVFVCVEYYPLLFITGNTLQCI

MLVYCFLGYCCCCYFGLFCLLNRYFRLTLGVYDYLVSTQEFRYMNSQGLLPPKSSIDA

FKLNIKLLGIGGKPCIKVATVQSKMSDVKCTSVVLLSVLQQLRVESSSKLWAQCVQLH

NDILLAKDTTEAFEKMVSLLSVLLSMQGAVDINRLCEEMLDNRATLQAIASEFSSLPS

YAAYATAQEAYEQAVANGDSEVVLKKLKKSLNVAKSEFDRDAAMQRKLEKMADQAMTQ

MYKQARSEDKRAKVTSAMQTMLFTMLRKLDNDALNNIINNARDGCVPLNIIPLTTAAK

LMVVVPDYGTYKNTCDGNTFTYASALWEIQQVVDADSKIVQLSEINMDNSPNLAWPLI

VTALRANSAVKLQNNELSPVALRQMSCAAGTTQTACTDDNALAYYNNSKGGRFVLALL

SDHQDLKWARFPKSDGTGTIYTELEPPCRFVTDTPKGPKVKYLYFIKGLNNLNRGMVL

GSLAATVRLQAGNATEVPANSTVLSFCAFAVDPAKAYKDYLASGGQPITNCVKMLCTH

TGTGQAITVTPEANMDQESFGGASCCLYCRCHIDHPNPKGFCDLKGKYVQIPTTCAND

PVGFTLRNTVCTVCGMWKGYGCSCDQLREPLMQSADASTFFKRVCGVSAARLTPCGTG

TSTDVVYRAFDIYNEKVAGFAKFLKTNCCRFQEKDEEGNLLDSYFVVKRHTMSNYQHE

FIGURE 33 (D)

ETIYNLVKDCPAVAVHDFFKFRVDGDMVPHISRQRLTKYTMADLVYALRHFDEGNCDT

LKEILVTYNCCDDDYFNKKDWYDFVENPDILRVYANLGERVRQSLLKTVQFCDAMRDA

GIVGVLTLDNQDLNGNWYDFGDFVQVAPGCGVPIVDSYYSLLMPILTLTRALAAESHM

DADLAKPLIKWDLLKYDFTEERLCLFDRYFKYWDQTYHPNCINCLDDRCILHCANFNV

LFSTVFPPTSFGPLVRKIFVDGVPFVVSTGYHFRELGVVHNQDVNLHSSRLSFKELLV

YAADPAMHAASGNLLLDKRTTCFSVAALTNNVAFQTVKPGNFNKDFYDFAVSKGFFKE

GSSVELKHFFFAQDGNAAISDYDYYRYNLPTMCDIRQLLFVVEVVDKYFDCYDGGCIN

ANQVIVNNLDKSAGFPFNKWGKARLYYDSMSYEDQDALFAYTKRNVIPTITQMNLKYA

ISAKNRARTVAGVSICSTMTNRQFHQKLLKSIAATRGATVVIGTSKFYGGWHNMLKTV

YSDVETPHLMGWDYPKCDRAMPNMLRIMASLVLARKHNTCCNLSHRFYRLANECAQVL

SEMVMCGGSLYVKPGGTSSGDATTAYANSVFNICQAVTANVNALLSTDGNKIADKYVR

NLQHRLYECLYRNRDVDHEFVDEFYAYLRKHFSMMILSDDAVVCYNSNYAAQGLVASI

KNFKAVLYYQNNVFMSEAKCWTETDLTKGPHEFCSQHTMLVKQGDDYVYLPYPDPSRI

LGAGCFVDDIVKTDGTLMIERFVSLAIDAYPLTKHPNQEYADVFHLYLQYIRKLHDEL

TGHMLDMYSVMLTNDNTSRYWEPEFYEAMYTPHTVLQAVGACVLCNSQTSLRCGACIR

RPFLCCKCCYDHVISTSHKLVLSVNPYVCNAPGCDVTDVTQLYLGGMSYYCKSHKPPI

SFPLCANGQVFGLYKNTCVGSDNVTDFNAIATCDWTNAGDYILANTCTERLKLFAAET

LKATEETFKLSYGIATVREVLSDRELHLSWEVGKPRPPLNRNYVFTGYRVTKNSKVQI

GEYTFEKGDYGDAVVYRGTTTYKLNVGDYFVLTSHTVMPLSAPTLVPQEHYVRITGLY

PTLNISDEFSSNVANYQKVGMQKYSTLQGPPGTGKSHFAIGLALYYPSARIVYTACSH

AAVDALCEKALKYLPIDKCSRIIPARARVECFDKFKVNSTLEQYVFCTVNALPETTAD

IVVFDEISMATNYDLSVVNARLRAKHYVYIGDPAQLPAPRTLLTKGTLEPEYFNSVCR

LMKTIGPDMFLGTCRRCPAEIVDTVSALVYDNKLKAHKDKSAQCFKMFYKGVITHDVS

SAINRPQIGVVREFLTRNPAWRKAVFISPYNSQNAVASKILGLPTQTVDSSQGSEYDY

VIFTQTTETAHSCNVNRFNVAITRAKIGILCIMSDRDLYDKLQFTSLEIPRRNVATLQ

FIGURE 33 (E)

AENVTGLFKDCSKIITGLHPTQAPTHLSVDIKFKTEGLCVDIPGIPKDMTYRRLISMM

GFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQLGFSTGVN

LVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQMLSDTL

KGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWNHSVG

FDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVKRV

DWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW

KFYDAQPCSDKAYKIEELFYSYATHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVL

SNLNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDID

YVPLKSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNT

FTRLQSLENVAYNVVNKGHFDGHAGEAPVSIINNAVYTKVDGIDVEIFENKTTLPVNV

AFELWAKRNIKPVPEIKILNNLGVDIAANTVIWDYKREAPAHVSTIGVCTMTDIAKKP

TESACSSLTVLFDGRVEGQVDLFRNARNGVLITEGSVKGLTPSKGPAQASVNGVTLIG

ESVKTQFNYFKKVDGIIQQLPETYFTQSRDLEDFKPRSQMETDFLELAMDEFIQRYKL

EGYAFEHIVYGDFSHGQLGGLHLMIGLAKRSQDSPLKLEDFIPMDSTVKNYFITDAQT

GSSKCVCSVIDLLLDDFVEIIKSQDLSVISKVVKVTIDYAEISFMLWCKDGHVETFYP

KLQASQAWQPGVAMPNLYKMQRMLLEKCDLQNYGENAVIPKGIMMNVAKYTQLCQYLN

TLTLAVPYNMRVIHFGAGSDKGVAPGTAVLRQWLPTGTLLVDSDLNDFVSDADSTLIG

DCATVHTANKWDLIISDMYDPRTKHVTKENDSKEGFFTYLCGFIKQKLALGGSIAVKI

TEHSWNADLYKLMGHFSWWTAFVTNVNASSSEAFLIGANYLGKPKEQIDGYTMHANYI

FWRNTNPIQLSSYSLFDMSKFPLKLRGTAVMSLKENQINDMIYSLLEKGRLIIRENNR

VVVSSDILVNN

FIGURE 34 (A)

RVCGVSAARLTPCGTGTSTDVVYRAFDIYNEKVAGFAKFLKTNC

CRFQEKDEEGNLLDSYFVVKRHTMSNYQHEETIYNLVKDCPAVAVHDFFKFRVDGDMV

PHISRQRLTKYTMADLVYALRHFDEGNCDTLKEILVTYNCCDDDYFNKKDWYDFVENP

DILRVYANLGERVRQSLLKTVQFCDAMRDAGIVGVLTLDNQDLNGNWYDFGDFVQVAP

GCGVPIVDSYYSLLMPILTLTRALAAESHMDADLAKPLIKWDLLKYDFTEERLCLFDR

YFKYWDQTYHPNCINCLDDRCILHCANFNVLFSTVFPPTSFGPLVRKIFVDGVPFVVS

TGYHFRELGVVHNQDVNLHSSRLSFKELLVYAADPAMHAASGNLLLDKRTTCFSVAAL

TNNVAFQTVKPGNFNKDFYDFAVSKGFFKEGSSVELKHFFFAQDGNAAISDYDYYRYN

LPTMCDIRQLLFVVEVVDKYFDCYDGGCINANQVIVNNLDKSAGFPFNKWGKARLYYD

SMSYEDQDALFAYTKRNVIPTITQMNLKYAISAKNRARTVAGVSICSTMTNRQFHQKL

LKSIAATRGATVVIGTSKFYGGWHNMLKTVYSDVETPHLMGWDYPKCDRAMPNMLRIM

ASLVLARKHNTCCNLSHRFYRLANECAQVLSEMVMCGGSLYVKPGGTSSGDATTAYAN

SVFNICQAVTANVNALLSTDGNKIADKYVRNLQHRLYECLYRNRDVDHEFVDEFYAYL

RKHFSMMILSDDAVVCYNSNYAAQGLVASIKNFKAVLYYQNNVFMSEAKCWTETDLTK

GPHEFCSQHTMLVKQGDDYVYLPYPDPSRILGAGCFVDDIVKTDGTLMIERFVSLAID

AYPLTKHPNQEYADVFHLYLQYIRKLHDELTGHMLDMYSVMLTNDNTSRYWEPEFYEA

MYTPHTVLQAVGACVLCNSQTSLRCGACIRRPFLCCKCCYDHVISTSHKLVLSVNPYV

CNAPGCDVTDVTQLYLGGMSYYCKSHKPPISFPLCANGQVFGLYKNTCVGSDNVTDFN

AIATCDWTNAGDYILANTCTERLKLFAAETLKATEETFKLSYGIATVREVLSDRELHL

SWEVGKPRPPLNRNYVFTGYRVTKNSKVQIGEYTFEKGDYGDAVVYRGTTTYKLNVGD

YFVLTSHTVMPLSAPTLVPQEHYVRITGLYPTLNISDEFSSNVANYQKVGMQKYSTLQ

GPPGTGKSHFAIGLALYYPSARIVYTACSHAAVDALCEKALKYLPIDKCSRIIPARAR

VECFDKFKVNSTLEQYVFCTVNALPETTADIVVFDEISMATNYDLSVVNARLRAKHYV

YIGDPAQLPAPRTLLTKGTLEPEYFNSVCRLMKTIGPDMFLGTCRRCPAEIVDTVSAL

VYDNKLKAHKDKSAQCFKMFYKGVITHDVSSAINRPQIGVVREFLTRNPAWRKAVFIS

PYNSQNAVASKILGLPTQTVDSSQGSEYDYVIFTQTTETAHSCNVNRFNVAITRAKIG

FIGURE 34 (B)

ILCIMSDRDLYDKLQFTSLEIPRRNVATLQAENVTGLFKDCSKIITGLHPTQAPTHLS

VDIKFKTEGLCVDIPGIPKDMTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAW

IGFDVEGCHATRDAVGTNLPLQLGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGD

QFKHLIPLMYKGLPWNVVRIKIVQMLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIG

PERTCCLCDKRATCFSTSSDTYACWNHSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQH

CQVHGNAHVASCDAIMTRCLAVHECFVKRVDWSVEYPIIGDELRVNSACRKVQHMVVK

SALLADKFPVLHDIGNPKAIKCVPQAEVEWKFYDAQPCSDKAYKIEELFYSYATHHDK

FTDGVCLFWNCNVDRYPANAIVCRFDTRVLSNLNLPGCDGGSLYVNKHAFHTPAFDKS

AFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVPLKSATCITRCNLGGAVCRHHANEYR

QYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQSLENVAYNVVNKGHFDGHAGEAP

VSIINNAVYTKVDGIDVEIFENKTTLPVNVAFELWAKRNIKPVPEIKILNNLGVDIAA

NTVIWDYKREAPAHVSTIGVCTMTDIAKKPTESACSSLTVLFDGRVEGQVDLFRNARN

GVLITEGSVKGLTPSKGPAQASVNGVTLIGESVKTQFNYFKKVDGIIQQLPETYFTQS

RDLEDFKPRSQMETDFLELAMDEFIQRYKLEGYAFEHIVYGDFSHGQLGGLHLMIGLA

KRSQDSPLKLEDFIPMDSTVKNYFITDAQTGSSKCVCSVIDLLLDDFVEIIKSQDLSV

ISKVVKVTIDYAEISFMLWCKDGHVETFYPKLQASQAWQPGVAMPNLYKMQRMLLEKC

DLQNYGENAVIPKGIMMNVAKYTQLCQYLNTLTLAVPYNMRVIHFGAGSDKGVAPGTA

VLRQWLPTGTLLVDSDLNDFVSDADSTLIGDCATVHTANKWDLIISDMYDPRTKHVTK

ENDSKEGFFTYLCGFIKQKLALGGSIAVKITEHSWNADLYKLMGHFSWWTAFVTNVNA

SSSEAFLIGANYLGKPKEQIDGYTMHANYIFWRNTNPIQLSSYSLFDMSKFPLKLRGT

AVMSLKENQINDMIYSLLEKGRLIIRENNRVVVSSDILVNN

FIGURE 35 (A)

MESLVLGVNEKTHVQLSLPVLQVRDVLVRGFGDSVEEALSEARE

HLKNGTCGLVELEKGVLPQLEQPYVFIKRSDALSTNHGHKVVELVAEMDGIQYGRSGI

TLGVLVPHVGETPIAYRNVLLRKNGNKGAGGHSYGIDLKSYDLGDELGTDPIEDYEQN

WNTKHGSGALRELTRELNGGAVTRYVDNNFCGPDGYPLDCIKDFLARAGKSMCTLSEQ

LDYIESKRGVYCCRDHEHEIAWFTERSDKSYEHQTPFEIKSAKKFDTFKGECPKFVFP

LNSKVKVIQPRVEKKKTEGFMGRIRSVYPVASPQECNNMHLSTLMKCNHCDEVSWQTC

DFLKATCEHCGTENLVIEGPTTCGYLPTNAVVKMPCPACQDPEIGPEHSVADYHNHSN

IETRLRKGGRTRCFGGCVFAYVGCYNKRAYWVPRASADIGSGHTGITGDNVETLNEDL

LEILSRERVNININIVGDFHLNEEVAIILASFSASTSAFIDTIKSLDYKSFKTIVESCGN

YKVTKGKPVKGAWNIGQQRSVLTPLCGFPSQAAGVIRSIFARTLDAANHSIPDLQRAA

VTILDGISEQSLRLVDAMVYTSDLLTNSVIIMAYVTGGLVQQTSQWLSNLLGTTVEKL

RPIFEWIEAKLSAGVEFLKDAWEILKFLITGVFDIVKGQIQVASDNIKDCVKCFIDVV

NKALEMCIDQVTIAGAKLRSLNLGEVFIAQSKGLYRQCIRGKEQLQLLMPLKAPKEVT

FLEGDSHDTVLTSEEVVLKNGELEALETPVDSFTNGAIVGTPVCVNGLMLLEIKDKEQ

YCALSPGLLATNNVFRLKGGAPIKGVTFGEDTVWEVQGYKNVRITFELDERVDKVLNE

KCSVYTVESGTEVTEFACVVAEAVVKTLQPVSDLLTNMGIDLDEWSVATFYLFDDAGE

ENFSSRMYCSFYPPDEEEEDDAECEEEEIDETCEHEYGTEDDYQGLPLEFGASAETVR

VEEEEEEDWLDDTTEQSEIEPEPEPTPEEPVNQFTGYLKLTDNVAIKCVDIVKEAQSA

NPMVIVNAANIHLKHGGGVAGALNKATNGAMQKESDDYIKLNGPLTVGGSCLLSGHNL

AKKCLHVVGPNLNAGEDIQLLKAAYENFNSQDILLAPLLSAGIFGAKPLQSLQVCVQT

VRTQVYIAVNDKALYEQVVMDYLDNLKPRVEAPKQEEPPNTEDSKTEEKSVVQKPVDV

KPKIKACIDEVTTTLEETKFLTNKLLLFADINGKLYHDSQNMLRGEDMSFLEKDAPYM

VGDVITSGDITCVVIPSKKAGGTTEMLSRALKKVPVDEYITTYPGQGCAGYTLEEAKT

ALKKCKSAFYVLPSEAPNAKEEILGTVSWNLREMLAHAEETRKLMPICMDVRAIMATI

QRKYKGIKIQEGIVDYGVRFFFYTSKEPVASIITKLNSLNEPLVTMPIGYVTHGFNLE

EAARCMRSLKAPAVVSVSSPDAVTTYNGYLTSSSKTSEEHFVETVSLAGSYRDWSYSG

FIGURE 35 (B)

QRTELGVEFLKRGDKIVYHTLESPVEFHLDGEVLSLDKLKSLLSLREVKTIKVFTTVD

NTNLHTQLVDMSMTYGQQFGPTYLDGADVTKIKPHVNHEGKTFFVLPSDDTLRSEAFE

YYHTLDESFLGRYMSALNHTKKWKFPQVGGLTSIKWADNNCYLSSVLLALQQLEVKFN

APALQEAYYRARAGDAANFCALILAYSNKTVGELGDVRETMTHLLQHANLESAKRVLN

VVCKHCGQKTTTLTGVEAVMYMGTLSYDNLKTGVSIPCVCGRDATQYLVQQESSFVMM

SAPPAEYKLQQGTFLCANEYTGNYQCGHYTHITAKETLYRIDGAHLTKMSEYKGPVTD

VFYKETSYTTTIKPVSYKLDGVTYTEIEPKLDGYYKKDNAYYTEQPIDLVPTQPLPNA

SFDNFKLTCSNTKFADDLNQMTGFTKPASRELSVTFFPDLNGDVVAIDYRHYSASFKK

GAKLLHKPIVWHINQATTKTTFKPNTWCLRCLWSTKPVDTSNSFEVLAVEDTQGMDNL

ACESQQPTSEEVVENPTIQKEVIECDVKTTEVVGNVILKPSDEGVKVTQELGHEDLMA

AYVENTSITIKKPNELSLALGLKTIATHGIAAINSVPWSKILAYVKPFLGQAAITTSN

CAKRLAQRVFNNYMPYVFTLLFQLCTFTKSTNSRIRASLPTTIAKNSVKSVAKLCLDA

GINYVKSPKFSKLFTIAMWLLLLSICLGSLICVTAAFGVLLSNFGAPSYCNGVRELYL

NSSNVTTMDFCEGSFPCSICLSGLDSLDSYPALETIQVTISSYKLDLTILGLAAEWVL

AYMLFTKFFYLLGLSAIMQVFFGYFASHFISNSWLMWFIISIVQMAPVSAMVRMYIFF

ASFYYIWKSYVHIMDGCTSSTCMMCYKRNRATRVECTTIVNGMKRSFYVYANGGRGFC

KTHNWNCLNCDTFCTGSTFISDEVARDLSLQFKRPINPTDQSSYIVDSVAVKNGALHL

YFDKAGQKTYERHPLSHFVNLDNLRANNTKGSLPINVIVFDGKSKCDESASKSASVYY

SQLMCQPILLLDQALVSDVGDSTEVSVKMFDAYVDTFSATFSVPMEKLKALVATAHSE

LAKGVALDGVLSTFVSAARQGVVDTDVDTKDVIECLKLSHHSDLEVTGDSCNNFMLTY

NKVENMTPRDLGACIDCNARHINAQVAKSHNVSLIWNVKDYMSLSEQLRKQIRSAAKK

NNIPFRLTCATTRQVVNVITTKISLKGGKIVSTCFKLMLKATLLCVLAALVCYIVMPV

HTLSIHDGYTNEIIGYKAIQDGVTRDIISTDDCFANKHAGFDAWFSQRGGSYKNDKSC

PVVAAIITREIGFIVPGLPGTVLRAINGDFLHFLPRVFSAVGNICYTPSKLIEYSDFA

TSACVLAAECTIFKDAMGKPVPYCYDTNLLEGSISYSELRPDTRYVLMDGSIIQFPNT

YLEGSVRVVTTFDAEYCRHGTCERSEVGICLSTSGRWVLNNEHYRALSGVFCGVDAMN

FIGURE 35 (C)

LIANIFTPLVQPVGALDVSASVVAGGIIAILVTCAAYYFMKFRRAFGEYNHVVAANAL

LFLMSFTILCLAPAYSFLPGVYSVFYLYLTFYFTNDVSFLAHLQWFAMFSPIVPFWIT

AIYVFCISLKHCHWFFNNYLRKRVMFNGVTFSTFEEAALCTFLLNKEMYLKLRSETLL

PLTQYNRYLALYNKYKYFSGALDTTSYREAACCHLAKALNDFSNSGADVLYQPPQTSI

TSAVLQSGFRKMAFPSGKVEGCMVQVTCGTTTLNGLWLDDTVYCPRHVICTAEDMLNP

NYEDLLIRKSNHSFLVQAGNVQLRVIGHSMQNCLLRLKVDTSNPKTPKYKFVRIQPGQ

TFSVLACYNGSPSGVYQCAMRPNHTIKGSFLNGSCGSVGFNIDYDCVSFCYMHHMELP

TGVHAGTDLEGKFYGPFVDRQTAQAAGTDTTITLNVLAWLYAAVINGDRWFLNRFTTT

LNDFNLVAMKYNYEPLTQDHVDILGPLSAQTGIAVLDMCAALKELLQNGMNGRTILGS

TILEDEFTPFDVVRQCSGVTFQGKFKKIVKGTHHWMLLTFLTSLLILVQSTQWSLFFF

VYENAFLPFTLGIMAIAACAMLLVKHKHAFLCLFLLPSLATVAYFNMVYMPASWVMRI

MTWLELADTSLSGYRLKDCVMYASALVLLILMTARTVYDDAARRVWTLMNVITLVYKV

YYGNALDQAISMWALVISVTSNYSGVVTTIMFLARAIVFVCVEYYPLLFITGNTLQCI

MLVYCFLGYCCCCYFGLFCLLNRYFRLTLGVYDYLVSTQEFRYMNSQGLLPPKSSIDA

FKLNIKLLGIGGKPCIKVATVQSKMSDVKCTSVVLLSVLQQLRVESSSKLWAQCVQLH

NDILLAKDTTEAFEKMVSLLSVLLSMQGAVDINRLCEEMLDNRATLQAIASEFSSLPS

YAAYATAQEAYEQAVANGDSEVVLKKLKKSLNVAKSEFDRDAAMQRKLEKMADQAMTQ

MYKQARSEDKRAKVTSAMQTMLFTMLRKLDNDALNNIINNARDGCVPLNIIPLTTAAK

LMVVVPDYGTYKNTCDGNTFTYASALWEIQQVVDADSKIVQLSEINMDNSPNLAWPLI

VTALRANSAVKLQNNELSPVALRQMSCAAGTTQTACTDDNALAYYNNSKGGRFVLALL

SDHQDLKWARFPKSDGTGTIYTELEPPCRFVTDTPKGPKVKYLYFIKGLNNLNRGMVL

GSLAATVRLQAGNATEVPANSTVLSFCAFAVDPAKAYKDYLASGGQPITNCVKMLCTH

TGTGQAITVTPEANMDQESFGGASCCLYCRCHIDHPNPKGFCDLKGKYVQIPTTCAND

PVGFTLRNTVCTVCGMWKGYGCSCDQLREPLMQSADASTFLNRVCGVSAARLTPCGTG

TSTDVVYRAFDIYNEKVAGFAKFLKTNCCRFQEKDEEGNLLDSYFVVKRHTMSNYQHE

ETIYNLVKDCPAVAVHDFFKFRVDGDMVPHISRQRLTKYTMADLVYALRHFDEGNCDT

FIGURE 35 (D)

LKEILVTYNCCDDDYFNKKDWYDFVENPDILRVYANLGERVRQSLLKTVQFCDAMRDA

GIVGVLTLDNQDLNGNWYDFGDFVQVAPGCGVPIVDSYYSLLMPILTLTRALAAESHM

DADLAKPLIKWDLLKYDFTEERLCLFDRYFKYWDQTYHPNCINCLDDRCILHCANFNV

LFSTVFPPTSFGPLVRKIFVDGVPFVVSTGYHFRELGVVHNQDVNLHSSRLSFKELLV

YAADPAMHAASGNLLLDKRTTCFSVAALTNNVAFQTVKPGNFNKDFYDFAVSKGFFKE

GSSVELKHFFFAQDGNAAISDYDYYRYNLPTMCDIRQLLFVVEVVDKYFDCYDGGCIN

ANQVIVNNLDKSAGFPFNKWGKARLYYDSMSYEDQDALFAYTKRNVIPTITQMNLKYA

ISAKNRARTVAGVSICSTMTNRQFHQKLLKSIAATRGATVVIGTSKFYGGWHNMLKTV

YSDVETPHLMGWDYPKCDRAMPNMLRIMASLVLARKHNTCCNLSHRFYRLANECAQVL

SEMVMCGGSLYVKPGGTSSGDATTAYANSVFNICQAVTANVNALLSTDGNKIADKYVR

NLQHRLYECLYRNRDVDHEFVDEFYAYLRKHFSMMILSDDAVVCYNSNYAAQGLVASI

KNFKAVLYYQNNVFMSEAKCWTETDLTKGPHEFCSQHTMLVKQGDDYVYLPYPDPSRI

LGAGCFVDDIVKTDGTLMIERFVSLAIDAYPLTKHPNQEYADVFHLYLQYIRKLHDEL

TGHMLDMYSVMLTNDNTSRYWEPEFYEAMYTPHTVLQAVGACVLCNSQTSLRCGACIR

RPFLCCKCCYDHVISTSHKLVLSVNPYVCNAPGCDVTDVTQLYLGGMSYYCKSHKPPI

SFPLCANGQVFGLYKNTCVGSDNVTDFNAIATCDWTNAGDYILANTCTERLKLFAAET

LKATEETFKLSYGIATVREVLSDRELHLSWEVGKPRPPLNRNYVFTGYRVTKNSKVQI

GEYTFEKGDYGDAVVYRGTTTYKLNVGDYFVLTSHTVMPLSAPTLVPQEHYVRITGLY

PTLNISDEFSSNVANYQKVGMQKYSTLQGPPGTGKSHFAIGLALYYPSARIVYTACSH

AAVDALCEKALKYLPIDKCSRIIPARARVECFDKFKVNSTLEQYVFCTVNALPETTAD

IVVFDEISMATNYDLSVVNARLRAKHYVYIGDPAQLPAPRTLLTKGTLEPEYFNSVCR

LMKTIGPDMFLGTCRRCPAEIVDTVSALVYDNKLKAHKEKSAQCFKMFYKGVITHDVS

SAINRPQIGVVREFLTRNPAWRKAVFISPYNSQNAVASKILGLPTQTVDSSQGSEYDY

VIFTQTTETAHSCNVNRFNVAITRAKIGILCIMSDRDLYDKLQFTSLEIPRRNVATLQ

AENVTGLFKDCSKIITGLHPTQAPTHLSVDIKFKTEGLCVDIPGIPKDMTYRRLISMM

GFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQLGFSTGVN

FIGURE 35 (E)

LVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQMLSDTL

KGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWNHSVG

FDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVKRV

DWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW

KFYDAQPCSDKAYKIEELFYSYATHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVL

SNLNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDID

YVPLKSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNT

FTRLQSLENVAYNVVNKGHFDGHAGEAPVSIINNAVYTKVDGIDVEIFENKTTLPVNV

AFELWAKRNIKPVPEIKILNNLGVDIAANTVIWDYKREAPAHVSTIGVCTMTDIAKKP

TESACSSLTVLFDGRVEGQVDLFRNARNGVLITEGSVKGLTPSKGPAQASVNGVTLIG

ESVKTQFNYFKKVDGIIQQLPETYFTQSRDLEDFKPRSQMETDFLELAMDEFIQRYKL

EGYAFEHIVYGDFSHGQLGGLHLMIGLAKRSQDSPLKLEDFIPMDSTVKNYFITDAQT

GSSKCVCSVIDLLLDDFVEIIKSQDLSVISKVVKVTIDYAEISFMLWCKDGHVETFYP

KLQASQAWQPGVAMPNLYKMQRMLLEKCDLQNYGENAVIPKGIMMNVAKYTQLCQYLN

TLTLAVPYNMRVIHFGAGSDKGVAPGTAVLRQWLPTGTLLVDSDLNDFVSDADSTLIG

DCATVHTANKWDLIISDMYDPRTKHVTKENDSKEGFFTYLCGFIKQKLALGGSIAVKI

TEHSWNADLYKLMGHFSWWTAFVTNVNASSSEAFLIGANYLGKPKEQIDGYTMHANYI

FWRNTNPIQLSSYSLFDMSKFPLKLRGTAVMSLKENQINDMIYSLLEKGRLIIRENNR

VVVSSDILVNN

FIGURE 36

KSFKTIVESCGNYKVTKGKPVKGAWNIGQQRSVLTPLCGFPSQA

AGVIRSIFARTLDAANHSIPDLQRAAVTILDGISEQSLRLVDAMVYTSDLLTNSVIIM

AYVTGGLVQQTSQWLSNLLGTTVEKLRPIFEWIEAKLSAGVEFLKDAWEILKFLITGV

FDIVKGQIQVASDNIKDCVKCFIDVVNKALEMCIDQVTIAGAKLRSLNLGEVFIAQSK

GLYRQCIRGKEQLQLLMPLKAPKEVTFLEGDSHDTVLTSEEVVLKNGELEALETPVDS

FTNGAIVGTPVCVNGLMLLEIKDKEQYCALSPGLLATNNVFRLKGGAPIKGVTFGEDT

VWEVQGYKNVRITFELDERVDKVLNEKCSVYTVESGTEVTEFACVVAEAVVKTLQPVS

DLLTNMGIDLDEWSVATFYLFDDAGEENFSSRMYCSFYPPDEEEEDDAECEEEEIDET

CEHEYGTEDDYQGLPLEFGASAETVRVEEEEEEDWLDDTTEQSEIEPEPEPTPEEPVN

QFTGYLKLTDNVAIKCVDTVKEAQSANPMVIVNAANIHLKHGGGVAGALNKATNGAMQ

KESDDYIKLNGPLTVGGSCLLSGHNLAKKCLHVVGPNLNAGEDIQLLKAAYENFNSQD

ILLAPLLSAGIFGAKPLQSLQVCVQTVRTQVYIAVNDKALYEQVVMDYLDNLKPRVEA

PKQEEPPNTEDSKTEEKSVVQKPVDVKPKIKACIDEVTTTLEETKFLTNKLLLFADIN

GKLYHDSQNMLRGEDMSFLEEDAPYMVGDVITSGDITCVVIPSKKAGGTTEMLSRALK

KVPVDEYITTYPGQGCAGYTLEEAKTALKKCKSAFYVLPSEAPNAKEEILGTVSWNLR

EMLAHAEEARKLMPICMDVRAIMATIQRKYKGVKIQEGIVDYGVRFFFYTSKEPVASI

ITKLNSLNEPLVTMPIGYVTHGFNLEEAARCMRSLKAPAVVSVSSPDAVTTYNGYLTS

SSKTSEEHFVETVSLAGSYRDWSYSGQRTELGVEFLKRGDKIVYHTLESPVEFHLDGE

VLSLDKLKSLLSLREVKTIKVFTTVDNTNLHTQLVDMSMTYGQQFGPTYLDGADVTKI

KPHVNHEGKTFFVLPSDDTLRSEAFEYYHTLDESFLGRYMSALNHTKKWKFPQVGGLT

SIKWADNNCYLSSVLLALQQLEVKFNAPALQE

FIGURE 37

KSFKTIVESCGNYKVTKGKPVKGAWNIGQQRSVLTPLCGFPSQA

AGVIRSIFARTLDAANHSIPDLQRAAVTILDGISEQSLRLVDAMVYTSDLLTNSVIIM

AYVTGGLVQQTSQWLSNLLGTTVEKLRPIFEWIEAKLSAGVEFLKDAWEILKFLITGV

FDIVKGQIQVASDNIKDCVKCFIDVVNKALEMCIDQVTIAGAKLRSLNLGEVFIAQSK

GLYRQCIRGKEQLQLLMPLKAPKEVTFLEGDSHDTVLTSEEVVLKNGELEALETPVDS

FTNGAIVGTPVCVNGLMLLEIKDKEQYCALSPGLLATNNVFRLKGGAPIKGVTFGEDT

VWEVQGYKNVRITFELDERVDKVLNEKCSVYTVESGTEVTEFACVVAEAVVKTLQPVS

DLLTNMGIDLDEWSVATFYLFDDAGEENFSSRMYCSFYPPDEEEEDDAECEEEEIDET

CEHEYGTEDDYQGLPLEFGASAETVRVEEEEEEDWLDDTTEQSEIEPEPEPTPEEPVN

QFTGYLKLTDNVAIKCVDTVKEAQSANPMVIVNAANIHLKHGGGVAGALNKATNGAMQ

KESDDYIKLNGPLTVGGSCLLSGHNLAKKCLHVVGPNLNAGEDIQLLKAAYENFNSQD

ILLAPLLSAGIFGAKPLQSLQVCVQTVRTQVYIAVNDKALYEQVVMDYLDNLKPRVEA

PKQEEPPNTEDSKTEEKSVVQKPVDVKPKIKACIDEVTTTLEETKFLTNKLLLFADIN

GKLYHDSQNMLRGEDMSFLEEDAPYMVGDVITSGDITCVVIPSKKAGGTTEMLSRALK

KVPVDEYITTYPGQGCAGYTLEEAKTALKKCKSAFYVLPSEAPNAKEEILGTVSWNLR

EMLAHAEEARKLMPICMDVRAIMATIQRKYKGVKIQEGIVDYGVRFFFYTSKEPVASI

ITKLNSLNEPLVTMPIGYVTHGFNLEEAARCMRSLKAPAVVSVSSPDAVTTYNGYLTS

SSKTSEEHFVETVSLAGSYRDWSYSGQRTELGVEFLKRGDKIVYHTLESPVEFHLDGE

VLSLDKLKSLLSLREVKTIKVFTTVDNTNLHTQLVDMSMTYGQQFGPTYLDGADVTKI

KPHVNHEGKTFFVLPSDDTLRSEAFEYYHTLDESFLGRYMSALNHTKKWKFPQVGGLT

SIKWADNNCYLSSVLLALQQLEVKFNAPALQE

FIGURE 38

MESLVLGVNEKTHVQLSLPVLQVRDVLVRGFGDSVEEALSEARE

HLKNGTCGLVELEKGVLPQLEQPYVFIKRSDALSTNHGHKVVELVAEMDGIQYGRSGI

TLGVLVPHVGETPIAYRNVLLRKNGNKGAGGHSYGIDLKSYDLGDELGTDPIEDYEQN

WNTKHGSGALRELTRELNGGVVTRYVDNNFCGPDGYPLDCIKDFLARAGKSMCTLSEQ

LDYIESKRGVYCCRDHEHEIAWFTERSDKSCEHQTPFEIKSAKKFDTFKGECPKFVFP

LNSKVKVIQPRVEKKKTEGFMGRIRSVYPVASPQECNNMHLSTLMKCNHCDEVSWQTC

DFLKATCEHCGTENLVIEGPTTCGYLPTNAVVKMPCPACQDPEIGPEHSVADYHNHSN

IETRLRKGGRTRCFGGCVFAYVGCYNKRAYWVPRASADIGSGHTGITGDNVETLNEDL

LEILSRERVNINIVGDFHLNEEVAIILASFSASTSAFIDTIKSLDYKSFKTIVESCG

FIGURE 39

MESLVLGVNEKTHVQLSLPVLQVRDVLVRGFGDSVEEALSEARE

HLKNGTCGLVELEKGVLPQLEQPYVFIKRSDALSTNHGHKVVELVAEMDGIQYGRSGI

TLGVLVPHVGETPIAYRNVLLRKNGNKGAGGHSYGIDLKSYDLGDELGTDPIEDYEQN

WNTKHGSGALRELTRELNGGVVTRYVDNNFCGPDGYPLDCIKDFLARAGKSMCTLSEQ

LDYIESKRGVYCCRDHEHEIAWFTERSDKSCEHQTPFEIKSAKKFDTFKGECPKFVFP

LNSKVKVIQPRVEKKKTEGFMGRIRSVYPVASPQECNNMHLSTLMKCNHCDEVSWQTC

DFLKATCEHCGTENLVIEGPTTCGYLPTNAVVKMPCPACQDPEIGPEHSVADYHNHSN

IETRLRKGGRTRCFGGCVFAYVGCYNKRAYWVPRASADIGSGHTGITGDNVETLNEDL

LEILSRERVNINIVGDFHLNEEVAIILASFSASTSAFIDTIKSLDYKSFKTIVESCG

FIGURE 40

MSDNGPQSNQRSAPRITFGGPTDSTDNNQNGGRNGARPKQRRPQ

GLPNNTASWFTALTQHGKEELRFPRGQGVPINTNSGPDDQIGYYRRATRRVRGGDGKM

KELSPRWYFYYLGTGPEASLPYGANKEGIVWVATEGALNTPKDHIGTRNPNNNAATVL

QLPQGTTLPKGFYAEGSRGGSQASSRSSSRSRGNSRNSTPGSSRGNSPARMASGGGET

ALALLLLDRLNQLESKVSGKGQQQQGQTVTKKSAAEASKKPRQKRTATKQYNVTQAFG

RRGPEQTQGNFGDQDLIRQGTDYKHWPQIAQFAPSASAFFGMSRIGMEVTPSGTWLTY

HGAIKLDDKDPQFKDNVILLNKHIDAYKTFPPTEPKKDKKKKTDEAQPLPQRQKKQPT

VTLLPAADMDDFSRQLQNSMSGASADSTQA

FIGURE 41

MFIFLLFLTLTSGSDLDRCTTFDDVQAPNYTQHTSSMRGVYYPD

EIFRSDTLYLTQDLFLPFYSNVTGFHTINHTFDNPVIPFKDGIYFAATEKSNVVRGWV

FGSTMNNKSQSVIIINNSTNVVIRACNFELCDNPFFAVSKPMGTQTHTMIFDNAFNCT

FEYISDAFSLDVSEKSGNFKHLREFVFKNKDGFLYVYKGYQPIDVVRDLPSGFNTLKP

IFKLPLGINITNFRAILTAFSPAQDTWGTSAAAYFVGYLKPTTFMLKYDENGTITDAV

DCSQNPLAELKCSVKSFEIDKGIYQTSNFRVVPSGDVVRFPNITNLCPFGEVFNATKF

PSVYAWERKKISNCVADYSVLYNSTFFSTFKCYGVSATKLNDLCFSNVYADSFVVKGD

DVRQIAPGQTGVIADYNYKLPDDFMGCVLAWNTRNIDATSTGNYNYKYRYLRHGKLRP

FERDISNVPFSPDGKPCTPPALNCYWPLNDYGFYTTTGIGYQPYRVVVLSFELLNAPA

TVCGPKLSTDLIKNQCVNFNFNGLTGTGVLTPSSKRFQPFQQFGRDVSDFTDSVRDPK

TSEILDISPCSFGGVSVITPGTNASSEVAVLYQDVNCTDVSTAIHADQLTPAWRIYST

GNNVFQTQAGCLIGAEHVDTSYECDIPIGAGICASYHTVSLLRSTSQKSIVAYTMSLG

ADSSIAYSNNTIAIPTNFSISITTEVMPVSMAKTSVDCNMYICGDSTECANLLLQYGS

FCTQLNRALSGIAAEQDRNTREVFAQVKQMYKTPTLKYFGGFNFSQILPDPLKPTKRS

FIEDLLFNKVTLADAGFMKQYGECLGDINARDLICAQKFNGLTVLPPLLTDDMIAAYT

AALVSGTATAGWTFGAGAALQIPFAMQMAYRFNGIGVTQNVLYENQKQIANQFNKAIS

QIQESLTTTSTALGKLQDVVNQNAQALNTLVKQLSSNFGAISSVLNDILSRLDKVEAE

VQIDRLITGRLQSLQTYVTQQLIRAAEIRASANLAATKMSECVLGQSKRVDFCGKGYH

LMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEGKAYFPREGVFVFNGTSWFITQ

RNFFSPQIITTDNTFVSGNCDVVIGIINNTVYDPLQPELDSFKEELDKYFKNHTSPDV

DLGDISGINASVVNIQKEIDRLNEVAKNLNESLIDLQELGKYEQYIKWPWYVWLGFIA

GLIAIVMVTILLCCMTSCCSCLKGACSCGSCCKFDEDDSEPVLKGVKLHYT